saving (indicated in Table 9 as the required addition to the public sector's income). If the public sector does not succeed in reducing public consumption or mobilizing these additional funds from domestic sources (by means other than loans), then public saving in 1971 will be negative to the amount of IL 225 million.

The sources of public savings in 1971 are shown in Table 9, which contains an estimate of the net current receipts of the public sector. Public saving in 1971 is obtained by deducting public consumption from this total.

TABLE 9. Composition of public saving in 1966 and 1971 (IL millions at 1966 prices)

	1966	1971
1. Receipts: Taxes and compulsory payments to the Government	2,627	4,291
National Insurance contributions	334	435
Taxes of local authorities	310	250
Current transfers	137	210
Income from property	90	140
Interest receipts	182	279
Total current receipts	3,860	5,605
2. Less: Transfer payments and subsidies:		
Transfer payments to private sector	718	1,020
Interest payments to private sector	192	290
Subsidies	322	400
3. Net current income of the public sector	2,448	3,895
(plus: Required addition to public sector income)		(260)
4. Net (required) current income of the public sector	2,448	4,155
5. Less: Public consumption	2,777	4,120
Total public saving	(–)329	35

The saving of the three bodies comprising the public sector is discussed below.

(a) Government

The level of Government expenditure in the past was dictated to a large extent by Israel's security situation and the part played by the State in financing the absorption of immigration. The scale of immigration has diminished, but, in view of the security situation, no possibility of reducing security expenditure in the period of the plan is foreseeable. As a result of the particularly high security expenditure in 1967, which led to an increase of 28% in public consumption, a comparison based on 1966 would not correctly reflect the drastic reduction in the rate of growth of Government expenditure on civilian services planned for 1967–1971. Table 9 indicates that public consumption during 1966–71 will increase from IL 2,777 million to IL 4,120 million, representing a rise of 8.7% per annum. On the other hand, an examination of the increase in public consumption during 1967–71 reveals an average annual rise of only 3.8%.

Such a rate of growth reflects the Government's intention to restrain expenditure on civilian services during the period of the plan on the basis of freezing wages and keeping the increase in the number of employees in public services down to a minimum.

(b) National Institutions

The extent of negative saving by the National Institutions in future will be directly influenced by the extent of their activities in immigrant absorption and settlement; as stated, the consumption of the National Institutions, which is financed from external sources, constitutes the main part of the public sector's negative saving. As indicated by Table 5, the negative saving of the national institutions rose from (–) IL 92 million in 1961 to (–) IL 199 million in 1966. For lack of data on the National Institutions' future activities, it remains to be assumed that their negative saving will continue to grow.

(c) Local Authorities

The local authorities should not be regarded as a homogeneous body because of the great differences to be found between the municipal problems of one authority and another. The income and expenditure are determined to a considerable extent by local conditions, and the prospects of implementing a general policy of reducing the present gap between their income and expenditure should, therefore, be regarded with caution. The amount of the negative saving by this sector during the past ten years is shown in Table 5. However, a decrease in negative saving should be expected in the future, since economic progress in the various communities will produce higher incomes for the local authorities. Moreover, the unification of property tax systems will bring about local savings in administrative expenses.

(d) The Required Addition to the Income of the Public Sector

As indicated in Table 9, the economy will be short of IL 260 million to meet the national saving required, assuming that the private sector achieves savings at the rate of 18% of disposable income. The problem is, therefore, which method to choose in order to increase national saving by the required amount. Consideration should be given to: a) a further reduction in the rise of public civilian consumption; b) the extension of the taxation basis — or a combination of both methods.

As stated above, the rate of increase of public consumption during 1967 – 71 has been planned on a relatively low level (3.8%). This already takes into account a definite trend to avoid any non-essential expenditure by the public sector. It should be noted, therefore, that during the next four years, a strict and continuous watch must be kept on the level of this sector's expenditure. At the same time, it is worth stating that the Government's policy in the direction of strengthening the finaicial structure of firms in the private sector will constitute a helpful factor in encouraging saving in the future.

There is no doubt that one of the keys to the realization of the development plan lies in an effort by the Israeli economy to save in the coming years. It is the combination of public saving with an effort to increase private saving which will determine the possibility of diverting resources to investment in the economy.

CHAPTER SIX: GOVERNMENT FINANCING

PART I — GENERAL SURVEY

Introduction

The most striking aspect of Israeli Governmental revenues is their relatively large share in the total resources at the disposal of the economy. They constituted 21.5 percent in 1951, 31.5 percent in 1954, and a record 38 percent in 1961. In recent years the rate has been 34 — 35 percent.* Total Governmental revenues rose from IL 144 million in 1950 to IL 4,500 million in 1965; at 1966 prices,** they increased about 4.6 times during the period.

Governmental revenues from abroad include grants-in-aid, German reparations payments and foreign loans. The share of foreign receipts in total Governmental revenue reached its peak in 1954 (over one-third), followed by a steep decline to 14 percent in 1961. The proportion rose to 19 percent in 1962 owing to the devaluation of the Israeli pound in that year, and in 1965 amounted to 15 percent. The share of foreign sources in total income is calculated by "translating" the receipts from dollars into Israeli pounds at the official exchange rate. When the latter is lower than the effective rate, a two-fold downward deviation takes place in calculating the share of foreign sources. Firstly, the sums in pounds, which represent Government income from foreign sources, are artificially reduced by using the official exchange rate. Secondly, the low official rate is protected by customs duties, which are, in effect, a substitution for devaluation. These duties thus originate from foreign receipts, but appear in the present method of calculation as receipts from local sources.

In recent years the share of foreign receipts has declined, owing, in particular, to the cessation of reparations payments and the reduction of US Government aid.

Governmental revenues from local sources consist of taxes and other compulsory payments levied on income, property, expenditure and businesses; fees for Government services; surpluses from Government enterprises; and loans. Total revenue from taxes and compulsory payments amounted in 1955 to 23 percent of all disposable private income from all sources (including income from abroad); this figure rose gradually to 28 percent in 1965.

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* The proportion of Governmental revenues to Gross National Product in other countries in 1960 were (percentages): Israel — 39.5, West Germany — 36, Sweden — 35, France — 33, Holland — 30, USA and Denmark — 20, Burma, Greece, Japan and Ireland — about 22, and India — about 11.

** "Fixed prices" in this survey have been calculated — unless otherwise stated — according to the price index for public consumption. Fixed prices used in calculating the tax burden on the public should be based on the consumers' price index.

TABLE 1. Revenue from taxes and compulsory payments, 1950—1965

Year	Total (millions of IL, in current prices)	Millions of IL — 1966 prices				
		Total	Taxes on income	Taxes on property	Taxes on expenditure	Taxes on transactions
1950	60.0	451.1	150.4	13.5	251.9	35.3
1955	456.5	1,146.9	521.8	45.5	530.4	49.2
1960	1,098.7	1,993.9	794.9	71.5	1,029.4	98.1
1964	2,381.9	3,015.0	1,514.1	122.4	1,217.4	161.1
1965	2,917.6	3,267.2	1,674.9	130.7	1,313.9	147.7

Source: Reports on Government revenue.

1. Taxes on Income

Three trends may be discerned in regard to the ratio between taxes on income and total Governmental revenue from taxes and compulsory payments: a continuous rise from 1949 to 1956; a decline between 1956 and 1961, when taxes on expenditure rose owing to the utilization of import duties as "devaluation substitutes"; and again a rise from 1961 to 1965. Taxes on income include income tax levied on individuals and on firms, land value tax, National Insurance fees and death duties. The absorption and compulsory savings loans collected as a fixed proportion of income tax are, however, not included, since it is now clear that they are in fact loans. The Government began repayments in 1967 and the public has changed its attitude, recognizing that compulsory savings are actually savings.

Total revenue from income tax, which was only IL 20 million in 1950, amounted to about IL 1,500 million in 1965. In terms of 1966 prices this was at least a ten-fold increase. The ratio of income tax to national income, which was 5 percent in 1950, increased continuously to 10 percent in 1957, and rose again between 1960 and 1966 from 8.9 to 14.7 percent.

The increase in the proportion of income tax receipts and the rapid growth of total revenue — at a rate several times greater than that for Governmental revenues as a whole — reflect two processes: firstly, the rapid rise in private income liable for income tax (broadening of the tax base); secondly, the progressive nature of the taxes, leading to increased receipts as incomes rise.

Income tax regulations in Israel have undergone frequent changes, some of them intended as anti-inflationary measures, including changes in the marginal tax rates at various income levels. Tax rates were altered in most of the years during the period. Moreover, the effective rates are constantly changing with fluctuations in the cost-of-living allowance.

A correct evaluation of changes in the effective tax rates may be obtained by an examination of changes in the rates in relation to fixed real incomes, thus neutralizing the effects of price changes.

TABLE 2. Average income tax rate on fixed real income — married wage-earner with two children (percentage of income)

Income in IL in 1954	Average rate of tax in fiscal year							Change in tax rate 1951—1964 (%)
	1951	1954	1956*	1958	1960	1963	1964	
1,800	—	—	0.3	—	—	—	—	—
2,400	2.1	4.6	6.9	2.4	1.7	2.1	—	100
3,600	11.9	13.7	14.4	9.1	8.4	6.6	5.6	53
4,800	19.6	22.5	21.4	14.6	13.5	12.0	9.5	52
6,000	25.5	31.4	31.1	19.5	17.8	17.1	12.8	50
7,200	29.8	27.6	38.5	24.4	22.2	21.7	16.0	46
8,400	33.0	41.7	43.4	28.8	25.5	25.4	19.4	41
9,600	36.2	44.8	47.2	32.7	28.3	28.1	22.3	38
15,000	46.5	52.6	56.7	42.5	35.8	36.3	31.6	32
20,000	53.0	53.8	60.5	46.9	40.1	40.9	37.3	30

* Tax includes defense levy.

Source: Report of the Committee on Distribution of the National Income in Israel, p. 206 (Hebrew).

The period under review may be divided into two parts. The real tax burden on total income increased continuously, up to 1956, and was gradually alleviated after that year. Effective rates rose slightly in 1964, but the alleviation process was afterwards resumed.

In order to preserve the egalitarian distribution of personal income in Israel, marginal tax rates rise quickly. This policy, which is aimed at ensuring the level of tax revenue needed to finance Government activity, has resulted in relatively high average rates of tax at income levels generally considered as intermediate. The tax rates in force at present are shown in Table 3. As of June, 1967, a "security tax" of 10% of income tax payments was levied.

Income Tax on Companies. Corporations pay company taxes and income tax. When the State was established, the effective rate of these two taxes totaled about 50 percent of company incomes. Between 1951 and 1955 the effective rates reached 53.75 percent, with the addition, from 1956, of the defense levy, at the same rate as that imposed on individuals. In the fiscal year 1957 income tax on companies was raised to 30 percent and company profits tax to 33 percent, the effective rate thus totaling 63 percent. In 1958 the right to deduct company profits tax from the taxable basis for income tax was reintroduced, after having been discontinued in 1949. This naturally reduced the tax burden on companies. Company

TABLE 3. Income tax rates in operation since 1966—married wage-earner with two children

Annual income (IL)	Average tax rates (percentage)	Marginal tax rate (percentage)
4,000	—	—
5,000	1.4	19.0
6,000	4.0	19.0
7,000	5.9	21.0
8,000	7.8	23.0
9,000	9.5	26.0
10,000—11,000	11.6	28.0
12,000—13,000	14.8	33.0
14,000—17,000	16.6	42.0
18,000—20,000	24.9	50.0
21,000—24,000	30.0	55.0
28,000	35.1	57.5
37,800	40.0	62.5

Source: Amendment to income tax regulations (No. 8), 1966 (Hebrew).

profits tax was then lowered to 28 percent and income tax to 25 percent, reducing the effective tax rate from 63 to 46 percent. The effective tax, which included before the amendment 33% corporation and 30% income tax reduced to 28% corporation tax and the balance was debited in income tax at a rate of 25%. The combined rate reached 47.5 percent in 1966, following a rise in profits tax to 30 percent. The absorption and compulsory savings loan was then added to this rate. In 1967, a security tax of 10% of income tax was levied.

The percentage of income tax revenues provided by all company income taxes reached its lowest level (6.5 percent) in 1952. In 1954, it rose to 20 percent, and it has since contributed a fifth to a quarter of total income tax revenue. The exception to this trend was 1955, when the large revenue from companies was due to improved and accelerated collection — half the sum involved that year consisted of payments of arrears.

2. Taxes on Expenditure

Expenditure taxes fall into two main groups: taxes on imports and taxes on local production. Taxes on imports include general customs duties, fuel tax, purchase tax, travel tax, defense levy and defense stamp on imports and balance of funds, imposts, and other compulsory payments. Expenditure taxes on locally-produced goods and services include excise duties, the part of purchase tax imposed on local goods, entertainment tax, and, as from 1956, most of the income from the defense levy and defense stamp.

During the period 1950—1961 receipts from taxes on expenditure increased 4.8 times, in terms of 1966 prices. There was a decrease, in real terms, in 1962 as a result of the abolition of many import duties which were, until the devaluation of the pound in February 1962, in the category of devaluation substitutes. In real terms, receipts from expenditure taxes did not reach the high level of 1961 in 1963 and 1964, and surpassed it only in 1965. This was due to the considerable increase in imports in 1964 and 1965 and the boom, which was characterized by the widespread production of goods liable to expenditure taxes.

Import Duties. Income from customs and other import duties, excluding travel tax, amounted in 1950 to 43 percent of Governmental revenue from taxes and compulsory payments. The proportion dropped to 28 percent in 1952 but rose again to 35 percent in 1956 and 1957 and to 38 percent in 1958, when income from the various import duties exceeded income tax and the direct defense levy, and thus occupied top place in the tax table. An increase in the proportion of customs and import duties may be the result of higher taxes on various dutiable items, contraction of tax-free imports (i. e., broadening of the tax basis), or changes in the import structure; in Israel, the main cause was the raising of tax rates.

Complete exemption from customs duties covered 47 percent of the value of imports in Israeli pounds in 1953, and more than half in 1954 and 1955, after which it declined continuously to 35 percent in 1961. In 1961 and 1962, following the devaluation of the pound and the abolition of a series of "devaluation-substitute" customs duties, exemption rose again to 55 percent. Total exemption was granted mainly to raw materials and non-processed goods. The exemption rose to 56 percent in 1965 and 62 percent in 1966.

Taxes on Local Production. Until 1955 excise duties occupied the most important place among taxes on local products; thereafter, these were gradually superseded by purchase tax, the receipts from which have amounted in recent years to a third of total revenue from expenditure taxes.

Until 1952 excise revenue came almost entirely from tobacco and beverages. In 1953 excise duty on cement rose to second place, and then in 1954 to first place, where it remained for four years. The strong egalitarian trends that characterized tax legislation at the establishment of the State also found expression in customs and excise. Excise on salt — an extremely regressive tax — was entirely abolished; so was that on cement — to be restored in 1953.

Purchase tax is imposed on a large number of locally-produced and imported items, but many goods and services are exempted. This widespread exemption, which has prevented purchase tax from becoming a comprehensive tax on expenditure, reflects the factors determining policy on expenditure taxes in Israel. Exempted from purchase tax are food, seeds, fodder, agricultural equipment, and raw materials and machines for industry, handicrafts, electricity, etc. All seeds and fodder, raw materials and machines not locally produced are exempt from purchase tax, with a view to encouraging local production, since some of these items do not compete with Israeli products. Total incomes from purchase tax rose fourfold between 1955 and 1965 (on the basis of 1966 prices).

3. Property Taxes

Property taxes in Israel include municipal property tax, agricultural property tax and the war risk insurance levy (the latter two merged in 1961).

local taxes on real estate, and certain fees and licences similar in nature to property taxes. They have not formed a very considerable part of receipts from taxes and compulsory payments over the years, constituting only 2—4 percent of the total, apart from 1952, when a compulsory loan on property brought in twofold of the revenue from property taxes. Collection of this loan was not completed during the year, and payments went on until 1955.

The land transfer fee, which is not a property tax in the usual meaning of the word (since it is concerned with the transfer of property, and not with its ownership or use), does, however, resemble a property tax in that it reduces the sums received by owners at the time of property sales on which it is levied. Until 1956, the land transfer fee was 5 percent of the value of the transaction at the time of lease, and 7 percent at the time of sale, gift or exchange of property. These rates have been amended several times, and as from 1959 have been fixed at a uniform rate of 4.5 percent of the value of the transaction, be it on a leasehold, sale, gift, exchange or other basis. The general trend has been to reduce on the entry of transactions in the land register, especially sales, gifts and exchanges.

4. Domestic Loans

Domestic loans to the Government have come from various sources: from the central bank, which exercises a direct influence on the means of payment; from private commercial banks, whose inflationary effect depends on the degree of restriction of credit to other borrowers; from provident funds and insurance companies; from financial institutions; ordinary loans from the public; compulsory loans from the public; and loans from Governmental institutions.

Domestic loans have played an important role in governmental financing, particularly in the early years of the State: in 1949 they totaled 83 percent of total domestic resources at the Government's disposal; in 1950 50 percent, and in 1951 29 percent. This relative decline continued until 1953 (5 percent) but the proportion increased again to 30 percent in 1956. Since then, there has been a steep decline — to 4.8 percent in 1962, and in more recent years to 5—6 percent of the total domestic sources of the government.

Credit from the central bank and other financial institutions was of particular importance in 1948—1951 and 1956—1957, when the Government was in urgent need of sources of finance. This credit had a decidedly inflationary effect. Since 1959 the contribution of the monetary system to governmental financing has been negative, the loans granted by the Government totaling more than those it has received.

At the end of 1966 the balance of direct loans from the public was IL 500 million, and included the Defense Loan issued in 1956, the Housing Loan (1957), the Development Loan, and the short-term loans issued in 1960 and afterwards. Compulsory loans played an important role in 1952 — when such a loan was imposed on currency notes and deposits. Their importance increased again from the end of 1961, when the Absorption Loan was introduced (the rate being doubled a year later) and in 1962 with the imposition of compulsory savings. These loans were merged in 1963, repayment beginning in 1967.*

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* The conpulsory absorption loan will be abolished during the 1968 fiscal year.

Loans to the Government from the National Insurance Institute, the War Risk Insurance Fund, and the Development Authority enable the Government to exploit the surpluses in these funds; they are not inflationary and have been an important source of income since 1954, when the National Insurance Institute was established.

5. Foreign Sources and the Financing of Government Expenditure

Capital imports have also played a central role in financing the expenditure of the Israeli Government, which, together with other public institutions, received during 1949—1962 about three-quarters of all capital imported into Israel. This is due to world Jewry's readiness to help in the development of the Israeli economy through loans, and aid from foreign governments, as well as to the Government's efforts to obtain loans from abroad to meet the needs of the economy.

The economic aid of the US Government began in 1951. For three years it consisted of an ordinary grant, the counterpart funds serving to finance expenditure on development. From 1954 part of US aid was given as a loan, and from 1957 within the framework of the Development Loans Fund (DLF). Up to 1957 loans were given for a term of 40 years, at 4% interest, with repayment (including interest) in Israeli pounds. DLF loans are for periods of 10 to 20 years, bear interest of 3.5 to 5.25 percent, and are also repayable in Israeli currency. From 1952 to 1961 Israel received from the US Government grants and special aid totalling $ 264 million. In 1962, however, special aid was discontinued, as was Technical Assistance, through which about $ 15 million had been received since 1952.

In 1962 a radical change took place in the policy of the US Government with regard to the granting of development loans to Israel under DLF and AID (Agency for International Development). The rate of interest was lowered, but repayment was henceforth to be in dollars.

From 1954 Israel was enabled to acquire agricultural surpluses from the United States, either free of charge or for payment in Israeli pounds to the counterpart funds, which are primarily used for giving grants or loans repayable in Israeli currency (for 30 years at 3.5 to 5 percent interest). In 1966 the conditions were amended: a quarter of the agricultural surpluses is sold to Israel on a dollar credit basis for a period of 20 years at 2.5 percent, while payment for the remaining three-quarters is to be paid into the counterpart funds and deposited with the Bank of Israel. A considerable part of these counterpart funds was allocated to the Government of Israel in the form of long-term loans at a low rate of interest.

Counterpart funds of US agricultural surpluses totaled about $ 330 million between 1955 and 1966, of which about 56 percent was granted as loans to finance the Israeli Government's development projects, about 11 percent was given as a grant for the same purpose, 15 percent was transferred to the Cooley Fund for granting loans to Israeli enterprises owned fully or partly by US citizens, and about 18 percent earmarked for use by the US Government.

In September 1952 the Reparations Agreement was signed, under which the Government of West Germany undertook to pay DM 3,450 million ($ 820 million) — some $ 700 million to the Government of Israel directly and the other $ 120 million via the Israeli Government to various Jewish organizations abroad. In 1965 the Reparations Agreement came to an end.

Of total receipts, orders for ships and industrial machines and equipment accounted for 38 percent, fuel supply — 30 percent, iron and metals — 11 percent, and raw materials and various industrial products — 10 percent. The remainder was used to acquire agricultural products in connection with the implementation of the agreement.

The issue of Independence Bonds began in May 1951 and continued until 1954, when they were replaced by Development Bonds bearing 4 percent interest instead of 3.5 percent*. Receipts from the sale of bonds were an important instrument in financing Governmental expenditure on development and investment. The sale of bonds had been particularly significant in recent years with the end of the Reparations Agreement and the decline in US aid. In 1960 bonds covered 39 percent of investments in the Development Budget — the highest proportion since 1953. Table 4 shows the share of receipts from the sale of bonds in the financing of local investments.

TABLE 4. Sale of bonds and their share in the financing of local investment (IL millions)

Year	Gross sales*	Total investments in development budget	Infrastructure in development budget	Total local investments	Sale of bonds as % of investments in development budget	Sale of bonds as % of infrastructure in development budget	Sale of bonds as % of local investments
1951	117	73	28	217	160.3	557.1	53.9
1952	76	109	20	317	19.7	380.0	24.0
1955	82	299	72	534	27.4	113.9	15.4
1960	96	394	123	1,028	24.4	78.0	7.9
1964	250	799	387	2,979	31.3	64.6	8.4
1966	345	879	342	2,494	39.2	100.9	13.8

* Until 1962 at the rate of IL 1.80 = $1; as from 1962 at the rate of IL 3 = $1.

Source: Ministry of Finance.

Bondholders were given the right to cash their bonds before the official date of repayment, for purposes of financing investments, tourism, or settling in Israel; this privilege was also extended to Israeli residents receiving bonds as a gift from abroad.

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* This is the rate of interest received by the purchase of the bond at the issue prize. The interest paid by the Government naturally includes the cost of issue.

TABLE 5. Income from sales of Independence and Development Bonds, 1951— 196
(thousands of dollars)

Fiscal year	Bonds sold	Bonds redeemed and exchanged					Bonds held by public at end of year
		Early redemption in IL	Early redemption in $	Exchanges	Normal redemptions	Total	
1951	65,124	—	—	—	—	—	65,124
1952	42,012	—	—	—	—	—	107,136
1955	45,585	9,979	612	972	—	11,563	203,263
1960	53,256	25,802	3,979	340	—	29,921	359,877
1964	83,400	22,883	5,160	96	28,099	56,238	459,823
1965	91,749	17,548	7,620	162	27,325	52,655	498,917
Total 1951 — 1965	849,802	225,751	40,435	6,711	77,988	350,885	—

Source: Ministry of Finance.

Until the end of the fiscal year 1965, bonds to the value of $ 266 million were cashed before the normal time — $ 226 million in Israeli pounds and $ 40 million in dollars. The balance of bonds on this date was about $ 500 million. The Independence and Development Bonds had considerable influence on the calendar of foreign debt payments, owing to the concentration of bond redemptions in 1966 (for Independence Bonds) and in 1969 (for Development Bonds). Other bonds are redeemed in the normal manner — i.e., a given number of years after the date of issue.

SUMMARY

The taxation system in Israel has undergone continuous development since its inception. The dynamic qualities of the system may be seen in its efforts to adjust the taxation structure to the economic and social developments of Israeli society, while making an effort to retain the basic taxation principles of the system's progressiveness.

In recent years, administrative and structural changes, as well as changes in taxation rates were introduced, with the intention of adjusting the system to the development of the economy. In fields related to direct taxation, legislation exists and administrative instructions have been circulated with the objective of simplifying and combining administrative procedures. Fiscal legislation tried to adjust itself to the needs of current policies, whether increases such as the "security tax", or reductions, such as cancellation of the "absorption loan", various tax exemptions for industry — within the framework of the law for the encouragement of capital investments, as well as outside that framework — exemptions for new immigrants, etc. The decrease in receipts from loans and the growing dependence of Government activities' finances on tax receipts are part of a continuous process which will also be reflected by future developments of the structure and magnitude of the Governmental income structure.

II. TAXATION PLAN

1. THE FUNCTION OF TAXES IN THE DEVELOPMENT PLAN

Taxes fulfill a double purpose in the Development Plan: to allow for public consumption according to the Plan, and to create public savings which will divert the resources required from consumption to investment and improve the balance of payments.

During the period of the Development Plan, public consumption is expected to rise by 3.8% a year, from IL 3,554 million in 1967 to IL 4,120 million by 1971. This increase calls for a higher tax revenue, especially since it is intended simultaneously to accumulate public savings to finance the economic investments required. To increase the revenue does not necessarily mean raising the existing tax rates. The increase may be achieved largely through the natural elasticity of the taxation system, by which the effective tax rate and the share of taxes in the Gross National Product grow with the rise of the level of private incomes. Thus private consumption is expected to rise less than in the period 1955—1964: only 7.2% annually, from IL 8,100 million in 1967 to IL 10,680 million by 1971.

In the Development Plan civilian public consumption was estimated according to existing Government guidelines concerning the development required in the various services: health, welfare, general services and economic services. The amount of taxes to be collected by Government and the local authorities was based on the sum of public consumption expenditure, transfer and support payments, and the public saving required to carry out the development planned. By 1971, the required gross national saving, which is the difference between the planned gross investment of IL 3,565 million and the import surplus of IL 1,185 million, should therefore reach IL 2,380 million.

During the period of the Development Plan, the gross savings of the private sector should be increased from 15.7% in 1966 to 18% of gross disposable income (from internal sources) by 1971. This rate largely determines the amount of taxes the Government has to collect to implement the targets of the Development Plan.

Accordingly, as may be seen from Table 6, the amount of taxes which the Government must collect in 1971 is IL 4,986 million.

Thus a higher proportion of total economic resources will be required in taxes for the implementation of the Development Plan[*]: it will rise from 22.3% in 1966 to 27.1% by 1971. This index shows that a larger share of total national resources will go to the public sector.

Thus, in 1971 more taxes and compulsory payments are required than the amount receivable according to the present tax rates. It is projected that total Government receipts from taxes and compulsory payments will amount to IL 4,726, whereas the amount required under the Development Plan is IL 4,986 million.

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[*] Theoretically, the burden of taxes on the public could be measured and compared according to the ratio of taxes and compulsory payments to private income from all sources (including transfers from abroad), but since it is difficult to estimate transfers to nonprofit institutions, this is not feasible.

TABLE 6. Tax revenue required in 1971 (in IL million, at 1966 prices)

Required gross national saving	2,380
Projected gross private saving	2,345
Required public saving	35
Public sector receipts other than taxes and compulsory payments to Government	879
Less: Current transfers to the private sector	(-)1,710
Net public sector receipts other than from Government taxes	(-) 831
Less: public consumption	(-)4,120
Public saving required	(-)35
Required taxes and compulsory payments to Government	4,986

2. FORECAST OF GOVERNMENT REVENUE*

As stated, revenues to be expected in 1971 from taxes and compulsory payments total IL 4,726, including IL 435 million collected by the National Insurance Institute. Taxes on incomes, including National Insurance premiums, will amount to IL 2,577 million; taxes on expenditure to IL 1,608 million; service and licence fees and compulsory payments should bring in IL 307 million, and property taxes IL 234 million.

Revenue estimates based on the Tax Laws in force at the end of 1967 show that while aggregate taxes on income constituted 52 % of total tax receipts in 1966, they will amount to 54.5 % by 1971. This increased proportion will be attained largely thanks to the natural elasticity of taxes on income, the revenue from which tends to rise faster than private incomes themselves.

On the other hand, the share of taxes on expenditure will go down somewhat during the period of the Development Plan: from 36.5 % of total revenue in 1966 to 34 % by 1971. This altered ratio will make the entire tax system more progressive, since income tax, which is progressive, will play a greater part in overall taxation, while the share of taxes on expenditures, which generally have a regressive effect, will be lower.

According to the forecast, Government receipts during the period of the Development Plan should rise by 59 %, at an average rate of 12.3 % a year. The rise in tax revenues will be more rapid than the increase in the incomes of employees, self-employed and companies, which in the aggregate are expected to increase by 9 % annually during the period.

The nature and volume of tax revenues depend to a large extent on economic developments. The economic revival projected for 1968 is expected to bring about a 16 % increase in total revenue from taxes and compulsory payments. Increased employment, intensified economic development and rising consumption will lead to a 15.2 % increase in receipts from taxes on income, mainly as a result of the decline in unemployment, which will be accompanied by a rise in the aggregate income of the gainfully employed. Taxes on expenditure, on the other hand, will bring in only 9% more in 1968 than in 1967, because private consumption is expected to advance by only 4—4.5%. Receipts from service and licence fees are likewise expected to rise by 9%. A smaller increase in tax revenues is projected for 1969 and 1970, but towards the end of the period tax and compulsory payment revenues are again expected to grow more rapidly.

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* The forecast of revenues other than those of the National Insurance Institute was drawn up by the State Revenue Administration, and the data are given at 1966 prices. The National Insurance premium estimates were made by the Budget Division of the Ministry of Finance.

TABLE 7. Government revenues from taxes and compulsory payments, 1966—1971
(in IL million, 1966 prices)

	1966	1967	1968	1969	1970	1971
Total	2,856	2,981	3,452	3,807	4,226	4,726
Taxes on income*	1,498	1,554	1,791	2,014	2,274	2,577
of which National Insurance	334	344	371	395	416	435
Taxes on property	92	84	195	204	216	234
Taxes on expenditure	1,044	1,130	1,236	1,338	1,462	1,608
Service and licence fees	169	165	180	198	218	245
Compulsory payments**	53	48	50	53	56	62

* The Defense Levy imposed as from June 1967 is included in the income tax revenue.

** Not including absorption loan and compulsory savings.

Source: Ministry of Finance.

The increase in Government revenues from the various types of taxes will not be uniform throughout the period of the Development Plan. During 1968—1971 revenues from taxes on income are expected to increase by 66% at an average annual rate of 13.5% — but taxes on expenditure by only 42%, or about 8.4% annually. Taxes on property will rise by 178%, but part of this increase will be the result of administrative changes. As from 1968, the Government will collect urban property taxes on behalf of the local authorities, so that the sum of IL 195 million shown in Table 7 comprises some IL 110 million which will be transferred directly to the various local councils. Revenues from service and licence fees will rise by a total of 48% — 9.6% per annum.

Taxes on Incomes

The ratio between the amounts of income tax collected from employees, self-employed persons and companies in 1971 will not be much different from what it was in 1967*: about 50% from employees, 28% from the self-employed and 19% from corporations. In 1968 the revenues collected from employees will increase by a modest 5% since the expected drop in the unemployment rate will largely result in low-income earners joining the employee group of tax payers. Hence the employment of persons unemployed in 1966 and 1967, especially those with low qualifications, will only slightly increase tax revenues in that year. In 1969—1971, however, tax collections from employees are expected to rise considerably as a result of the projected 10% annual increase in the national wage bill. The rapid rise in employees' incomes during these years will increase income tax revenue by 18—19% annually.*

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* The forecast was based on the proportional distribution of income among employees, self-employed and companies in 1966.

The revenues collected from self-employed persons will increase by 19% in 1968, owing to increased collection of debts in this year as a result of higher incomes and improved liquidity among this group. In subsequent years, the projected 8% annual rise in their aggregate incomes should increase income tax revenues from this source by 12.5—14% annually.**

TABLE 8. Revenue from taxes on income, 1966—1971 (IL million, at current prices)

	1966	1967	1968	1969	1970	1971
Total	1,498	1,554	1,791	2,014	2,274	2,577
National insurance premiums	334	344	371	396	416	435
Income tax*						
From employees	585	605	635	749	887	1,056
From self-employed	314	345	412	464	528	603
From corporations	216	210	314	342	373	408
On interest and dividends	49	50	59	64	70	75

* Including Defense Levy.

Source: Ministry of Finance.

Corporation tax revenues are expected to rise 48% in 1968 as a result of greater economic activity and higher company incomes. The major increase will be due to the collection of large arrears of taxes, some of which could not be collected before because the companies were unable to realize part of their assets. Once the companies' income and liquidity improves, it will be possible to collect a considerable amount of these accumulated arrears. Afterwards, from 1969 until 1971, corporation tax revenues will increase by only 9% annually, less than the projected rate for employees and self-employed. This is because company taxes are proportional to income and not progressive: when a company's taxable income rises, the tax payable rises at the same rate and no more†. Moreover, some of the new investments under the Development Plan will be approved investments, so that the companies' income from them will be exempt from tax.

Revenues from National Insurance premiums will rise by only 28% during 1968—1971 — an annual average of 6.4%. The increase will be slow because of the relatively low ceiling of income liable to National Insurance payments.* Although as from the budgetary year 1968 the ceiling of income liable to premium payments will be raised to IL 700 a month, average personal income is expected to rise by 5.7% a year, so that revenues from National Insurance premiums will still lag behind the growth in income. Another reason is that National Insurance premiums are proportional to taxable income, whereas income tax is progressive and its revenues increase at a higher rate than private income.

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* For employees, average tax elasticity, defined as the percentage increase in tax receipts divided by the percentage wage increase, is more than 2.

** The average tax elasticity for self-employed persons is about 1.6. It is lower than for employees because deductions for various items, such as depreciation, reduce the taxable income, and because it is more difficult to collect taxes from this category of tax payers.

† For companies the tax elasticity is therefore 1.

Expenditure Taxes

The revenues from expenditure taxes will increase by 42% during the period in question and by 1971 will contribute 34% of total Government revenues from taxes and compulsory payments. According to forecast, the composition of these revenues will be very much the same as in 1966, although during the period of the Development Plan the proportion of various components is expected to change. In 1968 purchase tax receipts will rise considerably — by 17% — as a result of the higher rate of production and consumption. Most of the additional purchase tax revenues will be due to the rise in real private per capita income, which increases the demand for durable consumption and luxury goods, since the demand for these goods is highly elastic in relation to incomes and they carry a relatively high rate of purchase tax.** The increased demand for these products will bring in higher tax revenues.

Revenue from import duties will increase by about 50% — 10.8% per annum — during the period of the plan as a result of the growth in imports. Most of this increase will be due to the rise in the import of consumption goods, by about 8% a year, since most of the customs are levied on these items. Investment goods, of which 16% more will be imported annually, are mostly exempt from customs duties. Part of the production input, of which 7% more will be imported annually, also benefit from a general customs exemption.†

Excise on fuel, including the fuel equalization fund, will bring in only IL 4 million more in 1968 than in 1967. The increase will be so low for two reasons: firstly, fuel revenues went up in 1967 owing to a temporary increase in the tax on petrol during June, July and August, which raised its price by an average of 19.2%; secondly, fuel consumption rose considerably and was 13% higher than in 1966. After the temporary price increase was abolished, the Israel Pound was devaluated in November 1967, and since it seemed desirable to maintain the previous price level, it became necessary to draw from the equalization fund, the revenue from which fund cannot, therefore, be expected to rise in 1968. However, the revenue from fuel excise is expected to go up in 1969—1970 by 9—10% and in 1971 by 14%.

Revenue from excise on cement went down in 1967 and is expected to grow very little, so that the amount will not be substantial. The rate payable

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* The gross mean income per head of a family according to the Savings Survey 1964/65 was IL 591 a month. The gross income of employed members of the liberal professions was IL 815 a month, and of self-employed professional men IL 857. See: Central Bureau of Statistics, Savings Survey, 1964/65, Special Publications Series No. 239.

** The average rate of purchase tax on musical instruments and radios in 1965/66 was 46%, on electrical and gas appliances 40.5%, on photographic and optical equipment 27.2%, and on clothing 20%. Purchase tax rates on certain types of electrical equipment — including radio and television receivers and electric refrigerators — were reduced in 1967.

† In 1966, 62% of total imports were totally exempt from customs duties.

TABLE 9. Taxes on expenditure, 1966–1971 (in IL million, at 1966 prices)

	1966	1967	1968	1969	1970	1971
Total	1,044	1,130	1,236	1,338	1,463	1,608
General import duty	341	355	383	429	480	533
Excise on fuel	169	206	210	229	253	289
Purchase tax*	306	325	380	404	431	465
Entertainment tax	5	6	7	7	8	9
Defence stamp on expenditure	50	56	61	67	74	82
Foreign travel tax	26	27	28	30	33	35
Excise on tobacco	85	102	110	113	118	124
Excise on cement	33	24	27	29	32	35
Excise on alcoholic beverages	29	29	30	32	34	36

* Including excise on tyres.

Source: Ministry of Finance.

has recently been reduced from IL 45 to IL 42 per ton to prevent a rise in building costs and encourage building activities.

The general increase in revenues from expenditure taxes will, according to the forecast, be the outcome of the following two trends: a 3.7% annual rise in real private consumption per capita, and a rise in total private consumption as a result of the population growth. As stated, the rise in average real private consumption will be responsible for most of the the increase in the expenditure-tax revenues.

Service and Licence Fees

Receipts from service and licence fees, including stamp duty, will amount to 5.2% of total Government revenues from taxes and compulsory payments. After these revenues went down by 2.4% per cent in 1967, they are expected to go up by 11.2% in 1968. The main increase will be in revenues from stamp duty and vehicle licensing fees. The rise in licensing fee revenues will be the result of an 11% annual increase in the number of vehicles (the number of private cars is expected to grow by 14% annually).

TABLE 10. Revenues from service and licence fees, 1966–1971 (in IL million, at 1966 prices)

	1966	1967	1968	1969	1970	1971
Total	169	165	180	197	218	245
Stamp duty	60	56	60	65	74	80
Vehicle licensing fees	42	44	47	53	59	67
Other service and licence fees	67	65	73	79	85	98

Source: Ministry of Finance.

Property Taxes

Revenue from property taxes, which as from 1968 will be levied in the form of a single comprehensive Government tax, will rise from IL 72 million in 1967 to IL 195 million in 1968. Over half the amount will be transferred directly to the local authorities, who have until now been collecting this tax in the form of urban and agricultural property rates. From 1969 to 1971, however, property tax revenues will go up more slowly than all other tax revenues, because they are proportional taxes levied at a uniform rate and therefore lack the elasticity of taxes on income and expenditure.

3. TAXES AND PUBLIC SAVING

The amount of taxes the Government must collect in order to be able to implement the Development Plan and attain its objectives is higher than the sum obtained from the tax forecast, which has been prepared on the assumption that the same tax rates will remain in force as at the beginning of 1968, and estimates total taxes to be collected in 1971 as IL 4,726 million. In order to implement the major investment plans and to reduce the deficit in the current account of the balance of payments to IL 1,185 million, it will thus be necessary to boost national savings by 1971 to IL 2,380 million. If the Government succeeds in collecting only IL 4,726 million in taxes, the net revenue of the public sector will be IL 3,895 (its total revenue less current transfers to the private sector). The projected public consumption of IL 4,120 million will thus create a negative public saving of IL 225 million. On the other hand, the gross private disposable income (from internal sources) will be IL 13,285 million. Even if the private sector saves as much as 18% of its income, private saving will amount to only IL 2,391 million, and the gross national saving will be IL 2,166 as against the required sum of IL 2,380. It should be noted that it will take a considerable effort to step up the private saving rate of the gross private income, since the marginal saving rate required is much higher.

To obtain larger savings it will, therefore, be necessary to increase Government revenues from taxes and compulsory payments beyond the amount forecast. However, if Government revenues are increased, gross private income is reduced and so is private saving. According to the calculation shown in Table 11 below, the Government will have to transfer IL 260 million from the private sector to release real resources for investment. Unless such resources are released, private consumption will rise considerably beyond the planned level, and the gross national saving will be lower than required.

As explained in the chapter on Saving, there are a number of ways of reducing the gap between the national saving required to finance the investments of the Development Plan and the projected national saving according to the taxation plan. To this end, several instruments of fiscal policy must be combined, so as to divert additional resources to the public sector or increase its savings. Two of the possibilities to be considered are a reduction in public consumption and a decrease in current transfers to the private sector — especially transfer and support payments.

TABLE 11. Projected* and required gross national saving, 1971 (in IL million, at 1966 prices)

Projected Government receipts from taxes and compulsory payments	4,726
Other public sector receipts	879
Total public sector receipts	5,605
Less: current transfers to the private sector	1,710
Net current public sector income	3,895
Less: public consumption	4,120
Public sector saving (negative)	(-)225
Gross private sector saving	2,345
Total gross national saving	2,120
Required gross national saving	2,380
Difference between projected and required saving	(-)260

* According to tax forecast.

The third alternative, which seems commendable in view of the demand for public consumption and Israel's social policy, is to intensify tax collection so as to divert the extra purchasing power from the private to the public sector. This may be done on several levels, as specified below.

(a) National Insurance Premiums

National Insurance Premiums are like income tax in that they are collected directly from incomes, but differ in that they are payable in proportion to income, with a lower and an upper limit. The premium payable is 5.5% of the employee's income, 3.7% coming from the employer and 1.8% from the employee. Self-employed persons pay the entire premium of 5.5% of their incomes. The minimum income on which the premium is payable is IL 50 per month — at which level no income tax is levied — and the maximum is IL 550. National Insurance premiums are a regressive tax, with no allowance for any deductions. If the ceiling of the income liable to National Insurance premium is raised, the system will become progressive, especially if at the same time lower incomes, from which revenues are anyhow inconsiderable, are exempted. The National Insurance Institute has submitted a proposal to the Finance Committee of the Knesset to raise the ceiling of income on which premiums are payable from IL 550 to IL 700 a month, but the real rise in incomes during the period of the Development Plan should make it possible to raise the ceiling still further. On the whole, the higher ceiling will improve the actuarial position of the Institute. The actuarial position of Old Age and Survivors' and Workmen's Children's insurance will be better; so, to some extent, will be that of Maternity Insurance, which includes birth allowances. Only the actuarial position of Work Injuries Insurance will be worsened.

Raising the income ceiling on which National Insurance premiums are payable (as well as the minimum income liable to premium payments) is also a relatively convenient measure from the point of view of public relations, and seems to offer a partial solution to the public savings problem.

(b) Income Tax on Income from Interest

A considerable portion of the income from interest on debentures — especially Government debentures and debentures of approved enterprises — is at present liable to a low rate of income tax. These are bought mainly by the higher-income class, whose income is liable to a much higher marginal income tax than that payable on their income from this interest. The average tax on income from interest is only 25% and this is also the marginal rate.

Although tax concessions on income from interest are an incentive to private saving, they serve mainly to divert the saving into certain channels and involve a tax loss. Moreover, these concessions eventually accrue to the higher income group, so that the progressivity of the income tax system is impaired. As explained in the chapter on Saving, private saving can be increased by allowing income tax credits on marginal savings through various long-term saving schemes, such as additional savings through provident funds or life insurance comprising a high savings component, provided credit is allowed exclusively for the additional saving. If such marginal tax rates are applied to income from interest on debentures to be issued in the future, according to the method proposed, the system will become more progressive and tax revenues will increase.

(c) Expanding the Basis and Changing the System of Indirect Taxes

Taxes on expenditure with a wide basis and at low rates have many advantages, both economic and administrative. If there are no particularly high tax rates the incentive to evade taxes is less. Under a system of this kind, the consumer is free to choose among the available resources those which best suit his taste. On the other hand, it is clear that there are various considerations in favor of exemptions and varying rates of purchase taxes, such as the progressivity of the system, the encouragement of new products or products manufactured in development areas, the encouragement of cultural and educational projects, and difficulties in tax collection. For all these reasons, Israel has a system of purchase taxes (including excise and service taxes) which leaves a considerable part of the production and of commodity and service imports uncovered. Hence the system is not as elastic as it should be, since tax increases can apply only to those few luxury items that are taxed in the first place. Moreover, in view of the policy of the last few years, which is intended to normalize the tax system by gradually abolishing excessively high tax rates, the system is losing its revenue potential.

Taxes on expenditures in Israel have two major drawbacks: firstly, partial coverage, which has a detrimental effect on both production and consumption decisions; secondly, their regressivity even after the deduction of subsidies*.

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* See Report of the Committee for Examining Israel's National Income, p. 220 onwards.

It is therefore proposed to introduce a flat rate tax on added value, to replace purchase tax and also cover all imports.*

Such a tax, which has already been introduced by some of the European Common Market countries, and is about to be adopted by several others, is based on fairly simple principles, although its implementation involves many difficulties. Every undertaking pays an indirect tax (generally at that rate) on the product value it has added. This means that every enterprise is taxed on the value of its sales, less its purchases of raw materials and products used for its own production.

The added value tax has many advantages. The most striking ones are: (a) As a flat rate tax it is neutral both within the branch concerned and as regards other branches of the economy. (b) It is supposed to encourage exports, since it is refundable, especially if it serves as a partial substitute for income taxes, which by international conventions are not refundable to the exporter. (c) In contrast to purchase tax on finished products, it does not impose a heavy burden on the producer of the finished product, who therefore has no temptation to try to evade it, especially since the system encourages a cross-check between enterprises. (The purchaser is interested in the vendor paying the tax, because otherwise he himself will not be able to receive credit for the tax paid.) (d) An added value tax, which also partially replaces income tax (especially for employees and self-employed persons), reduces the number of units to be handled by the tax authorities.

In effect the added value tax is a multi-stage expenditure tax on the national income whose basis does not include capital gains and income that is of the nature of a transfer payment. Its advantage is that being levied at a flat rate on the different components of the added value, it does not lead to distortions in the allocation of resources, as is the case with existing expenditure taxes. It has no effect on the relative use of production factors and does not discriminate between different branches of the economy, since it is paid at a standard rate. In addition it is proportional, so that, unlike the present expenditure tax system, it has no regressive effect.

As stated, however, the introduction of such an added value tax system in Israel involves many difficulties. A sudden shift from the present system, with its highly differentiated tax rates, to a flat rate tax (or a tax with a limited number of rates), might lead to economic and social difficulties. It should therefore be introduced carefully and gradually. The effective implementation of such a system also depends on proper accounts being kept by all the various enterprises, a stage which has not yet been reached in this country.

The proposal to introduce an added value tax in Israel is not made because of the need for higher tax revenues in order to increase the savings of the public sector. The disadvantages of the present system and the need to prepare for possible future admission to the Common European Market seem to make it imperative to begin moving in this direction.

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* This proposal was first made by A. Morag as early as 1964, see A. Morag, Added Value Tax, Economic Quarterly, 41—42 (Hebrew).

Chapter VIII

CHAPTER SEVEN: MONETARY POLICY, CREDIT INSTITUTIONS AND CAPITAL MARKETS[1]

Certain functions carried out by the financial markets and their component institutions are essential for the smooth operation and development of a modern economy. Three of the most important may be mentioned here:

a) Operation of an exchange mechanism by providing means of exchange and a standard of value acceptable to the public for making payments and settling debts;

b) Improvement of the savings and investment mechanism — on which economic growth depends — by creating financial institutions and instruments to facilitate the transfer of funds from the saver to the investor;

c) Establishing institutional arrangements for facilitating the transfer of claims of ownership (from promissory notes to various types of securities), so as to render financial instruments more marketable than other assets.

A discussion of Israel's financial markets and their contribution to the operation and development of the economy must be preceded by a review of the institutional structure of these markets, how they work, the ways they are controlled and regulated by the Government. These topics will be dealt with for each main financial market separately:

a) The monetary sector — the Bank of Israel and the banking institutions;

b) Financial institutions, which grant long-term credit for development purposes to the various branches of the economy;

c) Insurance sector — social insurance, pension funds and insurance companies;

d) The capital market.

I. THE MONETARY SECTOR

1. CONSTITUENTS OF THE MONETARY SECTOR

The characteristic feature of the institutions in this sector is that their liabilities constitute means of payment and their operations thus affect the amount of money in the economy[1], with consequences as to the orderly functioning of the payments mechanism and changes in the aggregate demand level (price level and position of international payments).

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[1] This chapter was prepared by the Research Department of Bank of Israel.

[2] According to paragraph 35 of the Bank of Israel Law, means of payment are defined as total currency in circulation and demand deposits in the banking institutions, excluding currency held by the banking institutions and demand deposits of the Government and of the banking institutions. (This definition applies to deposits in Israeli currency only.)

TABLE 1. Changes in means of payment, product, prices, and deficit in current account of balance of payments: 1950 – 67

Year	Means of payment (IL mill.) annual average	Percentage of cash in means of payment**	Percentage of average annual growth in means of payment	Percentage of growth in GNP, at constant prices	Annual change in consumers' price index	Percentage of change in current account of balance of payments
1950	170	34.1	31.7	–	5.0	28.2
1951	224	37.7	32.0	22.5	14.1	27.5
1952	247	41.2	10.4	5.0	57.8	-14.7
1953	290*	44.1	17.3	-0.2	28.1	-14.3
1954	331	42.7	25.8	18.6	12.2	-9.5
1955	398	41.6	20.5	10.4	5.9	18.8
1956	469	43.4	17.9	9.5	6.5	26.1
1957	560	41.1	19.4	9.0	6.4	-6.0
1958	646	38.7	15.2	7.3	3.4	-0.3
1959	727	36.8	12.5	11.2	1.5	-5.4
1960	826	35.0	13.7	7.8	2.3	8.[illegible]
1961	974	35.0	17.9	10.8	6.7	28.2
1962	1,138	33.7	16.8	10.9	9.5	11.0
1963	1,489	33.3	30.9	11.5	6.6	-9.3
1964	1,683	34.7	13.0	10.3	5.2	31.0
1965	1,833	35.3	9.0	8.2	7.7	-6.0
1966	1,967	36.4	7.3	0.6	8.0	-15.5
1967	2,366	38.9	20.3	1.2	0.2	–

– No data available

Sources:

D. Patinkin, The Israel Economy: The First Decade, Falk Project for Economic Research in Israel, 1959; Annual Reports of Bank of Israel.

* Old series (incl. foreign currency deposits). According to the new series, on which the rates of change between 1953 and 1954 are based, the total means of payment were only IL 263 million.

** Data up to 1953 are for end-of-year, and thereafter annual averages.

The authority to issue currency and to receive demand deposits is invested by law in the Bank of Israel and the banking institutions respectively. As the Central Bank, the Bank of Israel is a statutory body empowered to acquire assets as "cover" for the issue of currency which serves as legal tender, to the amount determined by the Governor of the Bank with Government approval.[2] The banking institutions are companies and cooperative societies authorized to engage in the business of receiving from the public on current account money which is to be repayable on demand by check.[3] Currency issued by the Bank of Israel and demand deposits held by the banking institutions constitute, as stated, the means of payment.

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[2] Bank of Israel Law, 5714–1954 (Laws of the State of Israel, Vol. VIII, 163). The amount issued is, according to the law, agreed upon in consultation with the Advisory Council. Prior to the establishment of the Bank of Israel, currency was issued by Bank Leumi Le'Israel. For the principles underlying the operation of this bank's issue department and of the Palestine Currency Board during the mandate, see R.D. Ottensooser, The Palestine Pound and the Israel Pound, Geneva, 1955.

As will be seen from Table 1, the quantity of money or means of payment grew from IL 170 million in 1950 to IL 2,366 million in 1967 (yearly averages). The rate of growth has been greater than the rate of real expansion of the economy in each year since the establishment of the State. We shall see below that the monetary expansion was in part the outcome of demand pressures emanating from the public and private sectors and realized through financing by the banking system. Moreover, the expansion was an independent cause of inflationary pressures in that it increased liquidity in the economy and the propensity to spend. These pressures, which meant that local demand for goods and services was greater than the supply at fixed prices, resulted in two phenomena which were to accompany the economy with varying degrees of intensity from 1948 to 1966: a rise in prices and a deficit on current account of the balance of payments. This deficit allows demand pressures to be met over and above domestic supply (so long as the economy can afford a deficit), whilst the rise in prices reflects a growing demand unsatisfied by the additional supply of goods and services.

2. SOURCES OF MONETARY EXPANSION[4]

The institutions in the monetary sector produce means of payment and other deposits when they acquire assets — mainly through granting credit to the public, the Government and the foreign sector (the accumulation of foreign currency assets is tantamount to giving of credit to foreign countries). The ability of the Bank of Israel to expand the money supply is limited only by the decisions of the Governor and the Government, since the law does not restrict the type of assets against which the Bank is authorized to issue currency.[5] The banking institutions may expand the quantity of money provided that they have at their disposal a suitable amount of assets recognized as reserves by the Bank of Israel. (Since the liquidity ratio required is lower than 100%, an addition of reserve assets to the banking institutions makes possible an increase of the means of payment by a certain multiple of the additional reserves.)

Some of the potential addition to the means of payment resulting from the above-mentioned acquisition of assets is offset by the wish of the public to hold financial assets which are "near money" (mainly fixed-term deposits of various kinds). The sources of monetary expansion shown in Table 2 represent the types of assets acquired by the banking system between 1950 and 1967.

a) Expansion of bank credit to the public — a small part through the Bank of Israel but mainly by the banking institutions — was the most stable source of monetary expansion. Apart from a few untypical years, credit to the

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3) Banking Ordinance, 1941; Bank of Israel Law, 1954, paragraph 1.

4) The term "monetary expansion" refers to means of payment and other monetary assets which are liabilities of the banking system.

5) Bank of Israel Law, paragraph 29: "All currency is a liability of the Bank against which the Bank shall hold, as cover, assets . . . " In fact, the Bank acquires three categories of assets: liabilities of the Government, liabilities of the public and the banking institutions, and foreign currency. Unlike in the case of the other assets, the Bank is obliged to acquire foreign currency so long as the control regulations for foreign currency remains as they are today.

public formed 30—50% of the sources of expansion.[6] This would appear to indicate that the banking institutions were not lacking liquid reserves, the sources of which we shall describe below.

TABLE 2. Monetary expansion and its sources: 1950—1967 (Percentages)

Year*	Total sources of monetary expansion (IL mill.)	Accumulation of foreign currency assets	Expansion of credit to the public	Expansion of credit to the Government	Other factors net	Means of payment	Less liquid deposits
1950	62	-26.8	46.5	83.6	-3.3	78.0	22.0
1951	56	-15.8	50.0	80.5	-14.7	87.3	12.7
1952	20	-13.6	147.5	20.7	-54.6	59.1	40.9
1953	83	18.7	67.0	5.8	8.5	62.0	38.0
1954	75	83.1	38.9	-24.8	2.8	77.8	22.2
1955	86	23.1	26.2	51.7	-1.0	82.9	17.1
1956	114	13.1	33.5	55.6	-2.2	85.7	14.3
1957	81	44.3	73.1	66.6	4.6	72.6	27.4
1958	165	38.9	39.4	23.9	-2.2	50.6	49.4
1959	146	62.0	41.2	3.5	-6.7	45.2	54.8
1960	245	62.5	38.2	-1.6	0.9	63.0	37.0
1961	186	72.2	51.3	-25.8	2.3	47.8	52.2
1962**	572	128.3	29.6	51.7	-6.2	50.3	49.7
1963	442	51.5	35.2	26.9	-13.6	79.8	20.2
1964	254	21.3	58.3	37.6	-17.2	38.6	61.4
1965	394	55.7	34.7	13.9	-4.3	48.7	51.3
1966	408	-17.2	71.5	49.3	3.6	26.7	73.3
1967 †	1,473	45.4	35.8	26.9	-8.1 ††	36.0	64.0

Sources: Until 1953 — Annual Statistical Abstracts, Patinkin, op. cit. 1954 onward — Annual Reports of the Bank of Israel.

* Up to 1953: estimate (fixed-term deposits in Israeli currency: according to balance sheets of the banking institutions; foreign currency deposits: gross estimate).

** Includes differentials due to devaluation of the Israel pound on 9.2.62.

† Includes devaluation differentials of 19.11.67.

†† Including open market operations.

b) In the years immediately following the establishment of the State, foreign currency assets at the disposal of the banking system decreased, resulting in monetary contraction[7], but this was offset by other expansionary factors. Net foreign currency balances increased, however, in 13 of the 15 following years, and in eight of them the accumulation of foreign currency assets was the main source of monetary expansion.

c) The increase in credit to the Government was the most important source of monetary expansion principally in two periods: immediately after the establishment of the State, when deficit financing on a large scale was necessary; and again from 1955 to 1957, between which the Sinai Campaign took place. In only four out of the 19 years under review did the Government cut down on its debts to the banking system, thus helping to reduce monetary expansion — in 1954 and from 1960 to 1962.

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[6] From 1949 to 1953 the share of this source was slightly higher on the average. Owing to the more or less stable increase in credit to the public, its share in sources grew particularly in those years when there was a considerable decline in total sources (1952, 1957, 1961, 1964). 1966 was an exception.

[7] The purchase of foreign currency from the currency issuing authority reduces the amount of means of payment in the hands of the public.

3. LESS LIQUID DEPOSITS

The fact that the Bank of Israel and the banking institutions grant credit and accumulate assets does not mean an addition to the means of payment when the public prefers to hold nonliquid deposits in the banking institutions. This refers to time deposits and savings deposits of the public (in Israeli currency), various types of foreign-currency deposits[8] and deposits by recipients of restitution payments from Germany of the Pazak and Tamam categories.[9] Up to 1957 monetary expansion was mainly characterized by an addition to the money supply, since there was no inclination in the inflationary conditions then prevailing to invest in fixed-term deposits; moreover, the flow of personal restitution payments began to increase only in 1958.

As from 1958 a larger part of the potential increases occurred in that section of monetary expansion which had been offset by the addition of less liquid deposits. With the growth in the flow of restitution payments, an attractive rate of interest was fixed for depositors in Pazak and Tamam accounts — up to 6%, exempt from income tax — and graduated according to the duration of the deposit. In 1960, with the increase in the accumulation of foreign currency balances, an additional incentive was provided for longer-term depositors (two to four years) in the form of an additional premium of 6 to 16%.[10] (With the devaluation of February 1962 the rate of interest was raised to 7%. It was decided in 1963 to encourage deposits in Pazak by reducing the rate of interest on Tamam deposits to 4.5%. The Pazak rate of interest was later — in early 1967 — reduced to 6%.) Table 3 shows the importance of the encouragement given to these deposits — they "drained" a not inconsiderable part of the external infusion caused by the accumulation of foreign currency assets. It should be stressed that the sums deposited are completely frozen — the banks are not allowed to use them for granting credit.

An increase — though a less impressive one — also took place in other nonliquid deposits. The large banks began to draw up savings programs in which considerable sums were accumulated, even if the rate of accumulation was not rapid until 1967. Fixed term deposits could not attract depositors money in inflationary conditions, owing to the restrictions of the interest law. There was nevertheless a slow rise in deposits of this type up to 1961. In March of that year the liquidity ratios on deposits of more than 18 months were raised and as a result of this and other factors (the appearance of Government short-term loans and the expansion of bill brokerage) the sums deposited began to decline.[11] In mid-1966 the liquidity ratios were again

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8) Mainly deposits connected with foreign trade transactions and transfer accounts of diplomats, immigrants, etc. Foreign residents' accounts (Patach) are not considered here — they are deducted from foreign currency assets. In the years prior to 1953 demand deposits in foreign currency were not separated from remaining demand deposits. In Table 2 we have estimated the change in the total of these deposits and transferred them from the means of payment column to the less liquid deposits column; this estimate is, however, far from accurate.

9) Pazak — from the Hebrew initials for fixed-term deposits, are denominated in Israeli currency but their value is linked to the rate of exchange; Tamam — from the Hebrew initials for 'residents transferring currency' — are deposits in foreign currency in which the recipients of restitution monies are allowed to hold part of their receipts — they may withdraw these deposits for certain purposes.

10) See Bank of Israel, Annual Report 1960, p. 230.

11) Until March 1961 it was not obligatory to hold liquid assets against deposits for a period of more than 18 months. Thereafter they were made subject to the same liquidity ratio imposed upon other deposits. In September 1966 the liquidity ratio for deposits of over 6 months was set at 10%.

lowered and the deposits began to increase rapidly. This turning-point wa also related to the development of the bill brokerage market, which will be discussed below. At the end of 1957 the means of payment formed more than 80% of total financial assets — liabilities of the banking system — held by the public. From the beginning of 1958 until the end of 1967 these financi financial assets grew by a total amount of more than IL 4,600 million, of which only 52% were means of payment.[12] As a result, the money supply constituted less than 57% of the total balance of financial assets held by the public, which amounted in December 1967 to IL 4,977 million.

TABLE 3. Changes in the balances of the less liquid deposits: 1955 — 1967 (IL millions)

Year	Accumulation of assets in foreign currency	Pazak and Tamam deposits	Surplus of accumulation over Pazak and Tamam deposits	Pazak and Tamam as % of accumulated foreign currency assets	Approved savings programs	Fixed term deposits in IL	Other, less liquid deposits
1955	20	1	19	5.0	1	18	-5
1956	15	2	13	13.3	10	—	3
1957	-36	11	-47	—	15	9	1
1958	64	17	47	26.6	27	4	13
1959	87	43	44	49.4	7	3	27*
1960	153	51	102	33.3	12	19	9
1961	134	78	56	58.2	14	-12	17
1962**	733	274	459	37.3	19	-18	10
1963	227	86	141	37.9	20	-14	-3
1964	54	129	-75	238.9	31	-11	6
1965	219	170	49	77.6	46	-13	-2
1966	-70	157	-227	—	45	118	-1
1967†	669 (352)	399 (204)	270 (148)	59.7 (58.0)	160	371	12

Source: Annual Reports of the Bank of Israel.

* Large increase due to change in the system of registration — see Bank of Israel, Annual Report, 1959, p. 238.

** Including changes due to devaluation and linkage differentials.

† Figures not in brackets include devaluation differentials; figures in brackets are net of devaluation differentials (19.11.67).

4. MONETARY EXPANSION AND INFLATIONARY PRESSURES

We have noted that the monetary expansion led to inflationary pressure, but it should be emphasized that there is no direct, simple or inevitable relationship between accelerated monetary expansion and the development of inflationary pressures. It is not the addition of means of payment which has led to a rise in prices and to the deficit in the balance of payments, but the increase in aggregate demand connected with monetary expansion, whether as cause or effect.[13] The increase in the quantity of money is a direct factor in the expansion of demand, since it increases the real balances, while its indirect effect is that it permits the realization of planned increases in spending. It was the large-scale investment essential for the productive employment of a rapidly growing population, the considerable rise in public consumption (defence, social services) and in private consumption that led to demand pressure in the Israeli economy. It is impossible to identify the relative shares of the sources of monetary expansion, shown in Table 2, with contribution to demand pressure. The accumulation of foreign currency balances reflects the fact that import of capital was greater than the deficit on current account of the balance of payments. The financial assets injected into the economy following the purchase of foreign currency balances by the banking system enabled both the private and the public sector to expand demand, though it is difficult to find out which of the aggregate demand components were most affected by the accumulation of balances. The expansion of banking credit to the Government and the public does not enable the source of inflationary pressures to be isolated, if only — as stated above — because the accumulation of foreign currency also constitutes a source of financing incremental demand in these sectors. Moreover, expanded credit sometimes indicates the source of demand pressures, though in other cases it merely reflects a change in financing needs in the wake of price increases which do not in fact originate from the credit-receiving sector.

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[12] The additional financial assets include IL 250 million of exchange differentials and linkage differentials following the devaluation of 1962, and a similar amount of such differentials following the 1967 devaluation.

The preceding paragraph would appear to indicate that care should be taken in drawing conclusions from the data on monetary expansion and its sources. We shall return to this subject again in the discussion on the methods and effectiveness of monetary policy. As mentioned above, the decision of the public to hold non-liquid deposits in the banking institutions offsets some of the potential monetary expansion. However, just as the addition of means of payment is not an exact index of the increase in demand pressures, so too the holding of "near money" should not be regarded as an indication of long term intention to abstain from spending. Non-liquid deposits in the banking institutions, the Government's short-term loan and commercial bills brokered by the banking institutions,[14] are highly liquid assets and their realization is likely to be a source of demand pressures in the event of a change in the relative return on various assets or in the expectations of investors with regard to prices and other economic developments. A comparison of the expansion in the money supply with the growth of other highly liquid financial assets, may well give a more complete picture of the development of the liquidity situation in the economy (see Table 4).

Though the means of payment in December 1967 were greater by 162.0% than they were at the end of 1961, their rate of growth was much slower than that of other liquid assets, which increased over the same period by more than 480%. (It should be remembered that the resources

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13) On the characteristics and factors underlying the inflationary process in Israel, see Patinkin, op. cit., Chapter 4; Halevi and Klinov, *Development of the Israeli Economy*, Chapter 10.

14) Banking institutions began to engage in bill brokerage — whereby one bank client lends directly to another client — customer, in order to circumvent the restrictions of the liquidity regulations and of the interest law.

at the disposal of the economy in 1967 were greater than in 1961 by not more than 130 % at current prices or 55 % at constant prices.) The significance of these changes for monetary policy will be discussed later. It should be stressed here, however, that the liquidity structure of the Israeli economy was more complex in 1967 than ten years previously — which gives rise to problems concerning the trends and methods of monetary policy.

TABLE 4. Means of payment compared to other liquid assets: 1961— 1967 (End-of-year balances)

Year	Means of payment	Deposits by restitution recipients*	Other deposits**	Government short-term loan	Bill brokerage†	Total
			IL millions			
1961	969	203	263	22	120	1,577
1962	1,257	477	273	100	263	2,370
1963	1,609	562	277	214	434	3,096
1964	1,707	692	303	264	613	3,579
1965	1,899	862	335	189	774	4,059
1966	2,008	1,019	477	271	1,021	4,796
1967 ††	2,539	1,418	1,020	379	742	6,098
			Percentages			
1961	61.4	12.9	16.7	1.4	7.6	100.0
1962	53.0	20.1	11.5	4.3	11.1	100.0
1963	52.0	18.2	8.9	6.9	14.0	100.0
1964	47.7	19.3	8.5	7.4	17.1	100.0
1965	46.8	21.2	8.3	4.7	19.1	100.0
1966	41.9	21.2	9.9	5.7	21.3	100.0
1967	41.6	23.3	16.7	6.2	12.2	100.0
			Rate of growth (percentages)			
1962	29.7	135.0	3.8	354.6	119.1	50.3
1963	28.1	17.8	1.5	114.0	65.0	30.6
1964	6.1	23.1	9.3	23.4	41.2	15.6
1965	11.2	24.6	10.6	-28.4	26.3	13.4
1966	5.7	18.2	42.4	43.4	31.9	18.2
1967	26.4	39.1	113.8	39.9	-27.3	27.1

Source: Annual Reports of the Bank of Israel.

* Pazak and Tamam (the latter include certain sums not originating from the receipt of restitution).

** Savings programs, fixed-term deposits in Israeli currency, deposits against liabilities, and foreign currency deposits of Israeli residents (excluding Pazak and Tamam).

† Figures for 1961 and 1962 are estimates.

†† Including differentials due to 19.11.67 devaluation.

5. LIQUIDITY OF THE BANKING INSTITUTIONS

We mentioned above that the credit extended by the banking institutions to the public form an important source of monetary expansion[15] , and that the capacity to grant credit depended on reserve assets being available in sufficient quantity. The liquid assets of the banking institutions vary in accordance with developments in two contrary directions: acquisition of foreign currency assets and the granting of credit by the Bank of Israel constitute a basis for the issue of currency which is of course a liquid asset, but not all this potential addition to liquid assets does in fact serve this role for the banking institutions. In the first place, they are obliged to hold the deposits of restitution recipients in foreign currency in their entirety with the Bank of Israel,[16] and can not use them to grant credit. Secondly, the increase in the amount of cash held by the public removes from the banking institutions an additional quantity of liquid assets originating from the acquisition of assets by the Bank of Israel mentioned above.

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[15] Accumulation of foreign currency assets and the granting of credit to the Government were carried out mainly by the Bank of Israel, while the extension of credit to the public was mainly done by the banking institutions.

A more formal and orderly presentation of the process whereby banking institutions gain or lose reserves is based on the term "infusion (or leakage)" or change in reserves. It is customary to distinguish between an external infusion (or leakage) which describes the influence of the central bank on the quantity of reserves, and an "internal infusion" (or leakage) which denotes the influence of the public on their quantity. An "infusion" is a change in reserves which adds liquid assets to the banking institutions whereas a "leakage" means reduction in their reserves. An external infusion occurs, therefore, when the Bank of Israel gives credit or accumulates foreign currency, whereas when the banking institutions deposit foreign currency in the Bank of Israel (these deposits are not ordinary reserves!), an external leakage takes place. An increase in the quantity of cash holdings by the public is internal leakage (and internal infusion occurs when the public reduces the quantity of cash in its possession). All in all we obtain the equation:

External infusion (or leakage) plus internal infusion (or leakage) = change in reserves.

The amount of reserves at the disposal of the banking institutions in Israel increased from about IL 116 million at the end of 1955 to IL 728 million in December 1967. Table 5 presents the "infusions" which led to an increase in the quantity of reserves. For more convenient discussion we may discern five sub-periods:

(a) In 1956-57 credit from the Bank of Israel (mainly to the Government) was the main source of infusion. There was no accumulation of foreign currency, and the leakage offset some two-thirds of the external infusion. As a result, there was a relatively moderate growth in reserves.

(b) Between 1958 and 1961 accumulation of foreign currency began on a considerable scale, and this brought about an external infusion. There was almost no net extension of credit by the Bank of Israel. The encouragement given to Pazak and Tamam deposits led to an external leakage, which offset about half the expansionary effect arising from the accumulation of foreign currency assets. In 1960 a marked increase occurred in reserves, but the average rate of growth during these years was not very different from what it was in 1956 and 1957.

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[16] Foreign currency connected with Pazak and Tamam accounts is deposited in full with the Bank of Israel. Foreign currency connected with Patach accounts is not a source of liquid assets either, since it has to be invested in full in foreign currency assets (liquid assets and loans to foreign residents).

TABLE 5. Source of changes in liquid assets of banking institutions: 1956–1967 (IL millions)

Year	External infusion (or leakage) A*		External infusion (or leakage) B	Internal infusion (or leakage)	Ordinary liquid assets in Israeli currency
	foreign currency, net, in Bank of Israel	credit from Bank of Israel	balances of banking institutions in Bank of Israel which are not liquid assets**	cash held by public	
1956	8.9	84.8	– 20.6	– 55.8	17.3
1957	– 9.6	50.7	– 14.5	– 2.6	24.0
1958	79.2	–5.6	– 24.3	– 20.5	28.8
1959	37.4	32.6	– 50.9	– 8.5	10.6
1960	142.7	16.2	– 60.7	– 39.6	58.6
1961	135.3	– 35.0	– 65.7	– 44.6	– 10.0
1962	769.8	– 294.3	289.5	– 65.2	120.8
1963	296.3	87.0	– 93.4	– 115.7	174.2
1964	85.3	120.5	– 142.6	– 65.3	– 2.1
1965	281.5	27.7	– 165.5	– 67.0	76.7
1966	– 61.6	276.7	– 162.0	– 93.8	– 40.7
1967†	596.5	220.8	– 440.0	– 215.0	162.3
1956–57	– 0.7	135.5	– 35.1	– 58.4	41.3
1958–61	394.6	8.2	– 201.6	– 113.2	88.0
1962–63	1,066.1	– 207.3	– 382.9	– 180.9	295.0
1964–66	305.2	424.9	– 470.1	– 226.1	33.9
1967	596.5	220.8	– 440.0	– 215.0	162.3

* Infusions are represented by positive figures (being potential addition to the volume of reserves) whereas leakages are represented by negative figures.

** Apart from deposits connected with Pazak and Tamam, also including balances, that banking institutions had to hold against fixed-time deposits in Israeli currency.

† Data are for the end of 1967 (including November devaluation differentials). In 1966 the Bank of Israel began operations in the open market (sale of Government bonds) which offset some of the expanded credit. Without these activities the external infusion in the form of credit from the Bank of Israel would have amounted to IL 291.8 million in 1966 and IL 329.0 million in 1967.

(c) An enormous external infusion took place in 1962—63 as a result of the flow of foreign currency and the effect of the devaluation of February 1962 on the value in Israel pounds of balances in foreign currency or linked to foreign currency. A decline in credit from the Bank of Israel and a marked rise in cash holdings and in balances connected with Pazak and Tamam deposits (external and internal leakage) did not prevent an unprecedented growth in reserves, which were 125% higher at the end of 1963 than two years before.

(d) In 1964 to 1966 there were external infusions both as a result of the accumulation of assets in foreign currency and because of the credit granted by the Bank of Israel. They were, however, almost entirely offset by an increase in the amount of cash held by the public and in the reserves deposited in the Bank of Israel in connection with Pazak and Tamam accounts. As a result, the average increase in reserves was lower than in any period since 1956.

(e) In 1967 a number of unusual factors were at work which led to a renewed addition to reserves at a rate higher even than that of

1962—63. With a view to giving a fillip to economic activity, which had slowed down considerably in 1966 owing to the Government policy of restraint, the Bank of Israel expanded credit to the public and the Government. The June War brought in its wake a renewed accumulation of foreign currency on a large scale. (The effect of the devaluation of November 19, was to increase considerably the external infusion arising from the accumulation of this foreign currency.) The leakage caused by a haevy growth in cash holdings (which was equal in the first nine months of 1967 to that for the three years 1964—66) — and an addition of the same order of magnitude as in former years to the balances connected with non-liquid deposits — were unable to prevent a large-scale expansion in reserves (almost 30% compared with the end of 1966).

Table 6 shows the development of the effective liquidity ratios of the banking institutions, together with the liquidity ratios as laid down by Bank of Israel regulations.[17] It will be seen that the influence (through the giving of credit) of an addition of liquid assets on the quantity of deposits subject to liquidity requirements depended on the changes in the liquidity ratios. Thus, for instance, the quantity of bank reserves declined by IL 10 million between the end of 1960 and the end of 1961, but the amount of deposits subject to liquidity grew by IL 45 million owing to a marked drop in the effective liquidity ratio. On the other hand, IL 295 million of liquid assets were added to the banks between the end of 1961 and the end of 1963. Had their liquidity ratio remained as it was at the end of 1961 (34.2 %), additional deposits of about IL 860 million would have been rendered possible. In fact they grew by only IL 450 million, because the effective liquidity ratio rose to 46.6 %.

The effective liquidity ratio is different from that laid down in the regulations of the Bank of Israel. When it is lower than the official minimum this means that the banking institutions have a deficit in liquid assets. These deficiencies may be:

(a) "Recognized" deficiencies — as a result of changes occurring from time to time in the liquidity regulations which necessitate considerable adjustments in the structure of assets and liabilities of the banking institutions; they are granted an extension to carry out the regulations and the deficiencies in this transitional period are not liable to fines;[18]

or

(b) Unauthorized deficiencies — on which the banking institutions have to pay fines. The level of fines[19] affected the size of the deficit

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17) Prior to the establishment of the Bank of Israel there were no proper statistics on the liquidity of the banking institutions. From partial data it may be seen that the effective liquidity ratio was almost 50% in 1950 and dropped to 20—30% in 1953, rising thereafter when the Bank of Israel was set up in 1954.

18) A large "recognized" deficit was created by changes in the liquidity regulations in 1961. (See Bank of Israel Report, 1961, p. 270—1.) The considerable discrepancy between the effective liquidity ratio and the formally required ratio was mainly due to the "recognized" deficiency.

19) Fines, which were set at 10% of the amount of the unauthorized deficiency at the beginning of 1963, were raised in early 1965 to 20.5% of a deficiency which amounted to more than 9% of the liquidity-liable deposits. (Since fines are not recognized as an expenditure for income tax purposes, their actual weight is even greater.) In February 1967 the maximum rate was again reduced — to 11% per annum.

but even when this level became very high they have not led the banking institutions to eliminate the deficiencies entirely.

TABLE 6. Cash holdings, liquid assets and liquidity ratios of the banking institutions 1955—1967 (end of year)

Year	Cash held by public (IL mill.)	Deposits subject to liquidity requirements (IL Mill)	Liquid assets in Israel currency (IL mill.)	Currency as % of means of payment	Effective liquidity ratio (%)	Formal liquidity ratio (%)
1955	173	41.1	116	296	39.3	..
1956	228	44.1	134	329	40.6	..
1957	231	40.1	158	392	40.2	..
1958	282	38.1	178	454	38.3	38(58)
1959	260	35.8	188	516	36.5	38(58)
1960	300	34.0	247	648	38.0	38(58)
1961	344	35.5	237	693	54.2	42(64)
1962	409	32.6	358	909	39.4	42(64)
1963	525	32.6	532	1,142	46.6	47(69)
1964	590	34.6	530	1,167	45.4	47(69)
1965	657	34.6	607	1,283	47.3	44(68)
1966	751	37.4	566	1,289	43.9	40(65)
1967†	966	38.1	728	1,612	45.2	40(65)

Source: Annual Reports of the Bank of Israel.

* Definition of liquid assets and deposits subject to liquidity requirements in 1955—57 was slightly different from that of 1958 on. The change is not, however, such as to affect the general trend.

** Up to 1958 there was no uniform average required liquidity ratio. For a short description, see M. Heth, Banking Institutions in Israel, The M. Falk Institute for Economic Research in Israel, 1966, Chapter 10.

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Discrepancies between the effective and the official liquidity ratios were also due to the implementation of arrangements for granting directed credit. Table 6 shows the formal liquidity ratios in parenthesis in the last column. The Bank of Israel is authorized to allow a reduction of the formal ratios to those appearing outside the parenthesis by permitting the granting of directed credit. (An explanation of this credit will be given later.) When the Bank of Israel does not permit banks to utilize in full their quota of directed credit, the effective liquidity ratio cannot reach the lowest level without the bank incurring liquidity deficiencies.

6. BANK CREDIT

The main and most profitable business of the banking institutions — without detracting the importance of their contribution to the operation of the payments mechanism — is the granting of credit. When the State was established the banking institutions had virtually no competitors in the field of credit transactions — a fairly common situation in developing economies. They gave ordinary bank credit and also served as a channel for loans from governmental funds (mainly from the Development Budget) and institutional depositors (provident and pension funds). As the economy grew, they rapidly expanded their activities, though at the same time two other types of financial institutions began to develop:

(a) Provident and insurance institutions;

(b) Financial institutions giving mainly long-term loans (mortgage and development banks, for example). Most of the important bodies in this field were set up by the Government or the large commercial banks.

TABLE 7. Assets* of financial intermediaries in Israel – selected years**: 1950–1966

	1950	1954	1958	1962	1966
	(IL millions)				
Banking system	294	793	1,533	3,777	6,251
Banking institutions	217	623	1,187	3,009	5,383
Bank of Israel	77†	170	346	768	868
Provident and insurance institutions	30	134	370	1,028	2,552
Provident and pension funds	22	105	305	849	2,116
Insurance companies	8	29	65	179	436
Financial institutions	46	244	525	1,813	4,544
Total	370	1,171	2,428	6,618	13,374
	(Percentages)				
Banking system	79.4	67.7	63.1	57.1	46.8
Banking institutions	58.6	53.2	48.9	45.5	40.3
Bank of Israel	20.8	14.5	14.2	11.6	6.5
Provident and insurance institutions	8.1	11.5	15.2	15.5	19.1
Provident and pension funds	5.9	9.0	12.6	12.8	15.8
Insurance companies	2.2	2.5	2.7	2.7	3.3
Financial institutions	12.4	20.8	21.6	27.4	34.1
Total	100.0	100.0	100.0	100.0	100.0

Source: 1950 and 1954: R. Floersheim, Financial Intermediaries in Israel: 1950–54
1958 on: Annual Reports of the Bank of Israel.

* Excluding contingent accounts.

** Data for 1958 on are not a direct continuation of the data for 1950 and 1954, but the differences are not significant.

† Issue Department of the Anglo-Palestine Bank.

Table 7 gives a breakdown of the assets of financial intermediaries in the Israeli economy. The decline in the share of the banking system reflects the fact that the growth of other financial intermediaries was more rapid. The data in the table do not, however, afford an exact measurement of the change in the importance of credit given by the banks. The growth of the financial institutions was in part related to the fact that credit previously granted by the Government (whether directly or through the banks) was mainly given — as from 1958 — by the financial institutions.[20] Moreover, the assets of the financial institutions are "inflated" by the fact that they deposit with the Accountant-General part of the proceeds of the bonds they issue, which are returned to them as a Government deposit. (The reason for this procedure will be discussed below.) Despite the decline in their relative weight, the banking institutions still constitute an extremely significant source of credit — particularly if account is taken of bill brokerage (not included in the data of Table 7).

The rapid rate of development and the inflationary pressures continuously prevalent in the economy (although of varying intensity) up to 1966, together with the restrictions of the interest law, resulted in the demand for credit always being greater than the capacity of the banking institutions to satisfy it at the legal rate of interest. With the encouragement of the Government and on the basis of directives from the Bank of Israel, they gave the major part of their credits to business, certain branches receiving preferential treatment. The share of industry in the credit balance rose from about 14% in 1950 to 28% in 1958 and some 40% in 1966 (see Table 8). The share of agriculture increased from 14% in 1950 to 26% in 1956, but declined gradually afterwards to 12% in 1966.[21] (The relative decline in the share of agricultural credit was connected with the slower growth of this branch since the late 1950's compared with industry, and with the considerable expansion in credit for export purposes, from which industry benefited more than agriculture.) The rise in the share of credit given to both industry and agriculture was due to no little extent to the system of credit direction supervised by the Bank of Israel. The system, which combines quantitative and qualitative control will be discussed below in connection with monetary policy. The share of the two branches in directed credit amounted in most years to about two-thirds,[22] compared to about two-fifths in non-directed credit. All in all, over half of the balance of banking credit was given to these branches from the mid-fifties onwards.

A marked decline took place in the share of commerce and construction in total banking credit. This change was no doubt partly due to the policy of credit direction. In evaluating the extent of the decline it should be noted in the first place, that the data in Table 8 refer only to the first recipients of credit, who may pass it on to customers (suppliers' credit, accounts for a considerable part of credit to commerce). From studies on the financial structure of Israeli industrial firms it will be seen that the share of credit to customers in total assets is considerable.[23] Secondly, credit to building up to 1954 included fairly large amounts of loans to home purchasers — given mainly by the credit cooperative societies. Credit of this type was afterwards given by mortgage banks, while bank credit was given mainly to contractors and construction firms.

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20) The banking institutions exercise a far greater influence than would appear from their share in total assets — one reason being that some of the important financial institutions are controlled by banks.

21) The marked decline in the share of agriculture from 1960 onwards was connected with the increase in export-financing funds, where the weight of agriculture was much less than that of industry.

22) The other main beneficiaries of directed credit were public services and the national institutions.

23) Surveys by Meir Tamari on the financial structure of industrial firms between 1956 and 1964 appeared in Bank of Israel Bulletins 17, 19, 22, 24, and 27. At the end of 1964, credit to customers of 200 larg firms producing a quarter of industrial output totalled IL 143 million. Banking credit to commerce (excluding bill brokerage) was then IL 105 million.

In the other branches, a particularly striking increase took place in credit to the local authorities — a development which apparently reflected a deterioration in their financial situation.[24] Consumer credit and other non-business loans are included in the item "miscellaneous," which took up less than a seventh of total credit balances throughout almost the whole period.[25]

TABLE 8. Distribution of bank credit to the public*, by destination — selected years: 1950–1966 (percentages)

	1950**	1952	1954	1956	1958	1960	1962	1964	1966
Agriculture	14.8	17.6	22.2	26.0	24.3	20.5	15.9	13.3	11.7
Industry	13.9	19.5	23.5	28.2	27.8	30.7	35.4	42.9	39.5
Construction	12.1	13.7	13.0	6.5	6.0	6.1	5.6	5.7	6.7
Commerce	14.0	13.8	15.2	11.2	11.5	11.4	10.3	7.1	6.2
Services	4.7	4.5	4.3	4.9	5.5	5.2	4.3	5.6	6.9
Credit institutions	6.5	4.0	2.8	3.2	1.6	2.0	2.5	3.1	4.2
Public services	2.3	4.0	3.4	4.0	4.5	4.7	3.5	2.4	3.0
Local authorities	2.1	3.1	1.8	1.4	1.5	1.5	5.3	4.3	8.3
National institutions	—	2.3	1.4	0.9	3.1	4.2	3.5	2.3	1.6
Miscellaneous	29.6	17.5	12.4	13.7	14.2	13.8	13.7	13.3	11.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total — IL millions	70	141	250	329	470	698	1,108	1,482	2,147

Sources: Until 1952 — CBS *Annual Abstracts*.
1954 on — *Annual Reports* of the Bank of Israel.

* Includes rediscount by Bank of Israel, credit from third party deposits and credit granted against government deposits for the purpose of meeting tax obligations.

** Banks only, September 1950.

Owing to lack of data, Table 8 does not include credit in the form of bill brokerage, the share of which has been fairly considerable (30 to 40% of ordinary credit) since 1963. Data on the breakdown of credit from this source in comparison with other types of banking credit in the middle of 1967 appear in Table 9. Comparison of the distribution of credit from the various sources shows that:

(a) The share of preferred branches — especially industry and agriculture — is greater in ordinary bank credit (including directed credit) than in the bill brokerage market, where the rate of interest is considerably higher. The difference is especially marked when the branch breakdown of directed credit is compared with that of bill brokerage.

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24) See the *Annual Reports* of the Bank of Israel from 1962 onwards — the chapter on the activities of the public sector.

25) Until the Bank of Israel was set up, there was no uniform reporting system, and the substantial weight of the "miscellaneous" clause reflects this deficiency, at least in part. (To a certain degree, this may also reflect the greater share of consumer credit during those years.)

(b) The share of construction and commerce, which is negligible in directed credit and relatively low in total bank credit, is considerably higher in the bill brokerage market, where it is equal to that of industry and agriculture. With other bank credit the share of the latter is about double that of construction and commerce.

TABLE 9. Branch distribution of bank credit by type: June 1967 (percentages)

	Directed Credit*	Bank Credit**	Bill brokerage	Total per branch	IL millions
a. Share of each branch in each type of credit					
Agriculture	16.2	7.1	9.3	9.7	
Industry	65.4	23.7	26.7	33.9	
Construction	0.3	11.1	23.9	11.8	
Commerce	1.8	8.3	11.5	7.6	
Services	3.2	8.5	5.8	6.6	
Credit institutions	6.8	6.4	8.3	7.0	
Public services	3.3	2.3	1.8	2.4	
Local authorities	—	14.5	1.6	8.0	
National institutions	2.6	1.6	0.3	1.5	
Miscellaneous (incl. private)	0.4	16.5	10.8	11.5	
Total	100.0	100.0	100.0	100.0	
In IL million –	766	1,770	848	3,385	
b. Breakdown according to type of credit					
Agriculture	37.8	38.3	24.0	100.0	328.1
Industry	43.6	36.6	19.8	100.0	1,147.1
Construction	0.5	48.9	50.6	100.0	400.9
Commerce	5.5	56.7	37.8	100.0	258.5
Services	10.8	67.4	21.8	100.0	224.2
Credit institutions	22.2	47.9	29.9	100.0	235.2
Public services	30.9	50.5	18.5	100.0	82.1
Local authorities	0.1	94.8	5.0	100.0	270.7
National institutions	39.1	55.1	5.8	100.0	50.8
Miscellaneous (incl. private)	0.9	75.4	23.7	100.0	388.3
Total	22.6	52.3	25.1	100.0	3,385.7

* Including rediscount by Bank of Israel and credit from deposits of the public earmarked for loans (e.g. share of banks in export funds).

** Including credit from non-governmental funds for loans.

Source: Bank of Israel, Dept. for Supervision of Banks, statistics of banking institutions.

At the end of 1966, almost four-fifths of bank credit was given in the form of loans of more than IL 100,000 each (see Table 10). About 1,670 large borrowers received credit to an average amount of IL 1.1 million each. (These data do not include credit in the bill brokerage market where the average loan balance is apparently greater than that in ordinary credit.) In this connection, it may be mentioned that ordinary bank credit, and even more so total credit given through the banking institutions (including directed credit and loans from Government deposits and from various special purpose funds) constitutes a very considerable proportion of total sources of business finance in Israel.[28]

TABLE 10. Data on large credit transactions of banking institutions* at end of selected years: 1951—1966

	1951	1956	1961	1966
Total credit (IL millions)	120.3	283.2	1,078.4	2,539.3
Of which: Large loans (per cent)**	52.2	48.7	63.0	73.5
Number of large loans	275	859	1,483	2,931
Average amount of loan (IL thousands)	228.3	160.5	458.3	636.4

* The table gives data on the number and size of large loans given by the commercial banks (excluding bill credit negotiated by banks). Credit of all types given by the bank to a customer appears as a single loan, but loans from various banks to one customer are not combined. Data collated by the Bank of Israel since 1962 on the balance of bank credit to large customers from all the banking institutions show that in all years these customers (those who got at least IL 100,000 each from any banking institution) received about two-thirds of total bank credit. The number of such customers rose from 1,170 at the end of 1962 to 1,670 at the end of 1966 and the average credit balance to each grew during the same period from IL 870,000 to IL 1.1 million.

** In 1951 and 1956 — IL 50,000 and above; in 1961 and 1966 — IL 100,000 and above.

Source: Controller of Banks, Bank of Israel.

This is due to a combination of several factors:

(a) Bank credit is a convenient and relatively cheap source of financing in the conditions of rapid development accompanied by inflationary pressures (particularly if investments, the financing of which from other sources would involve value linkage, can be financed with unlinked bank credits).

(b) The Government's encouragement to industrial and agricultural development, particularly for export promotion, was expressed inter alia through the granting of bank credit on especially favorable terms.

(c) The level of development of the Israeli capital market did not afford alternative sources of financing on a large scale. The market's backwardness was in part due to the very practice of financing through the Government, since entrepreneurs could obtain governmental financing at concessionary terms that a commercial capital market could not offer. (This point will be further elaborated in another part of this survey.)

Let us now describe briefly the structure of the banking system and its place in the Israeli money markets.

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[28] See surveys on the financial structure of industrial firms mentioned in footnote 23 and the article "Allocation of Short-Term Bank Credit to Industrial Firms in Israel in the Years 1956-57 to 1963-64," Bank of Israel Bulletin 28.

7. THE STRUCTURE OF THE BANKING SYSTEM[27]

There are two types of banking institutions in Israel: commercial banks, which are limited companies authorized to engage in banking — and credit cooperative societies. Since the establishment of the State, marked changes have taken place in the structure of the banking system.

(a) The number of banking institutions dropped (from 108 in 1950 to 45 at the end of 1966) as a result of the liquidation of most of the credit cooperative society sector.

(b) The existing institutions expanded their network of branches: on the establishment of the State the number of head offices was greater than the number of branches; in 1966 the ratio between them was 1 to 2.2, and at the end of 1966 it had declined to 1 to 15.

(c) The concentration of banking transactions in a small group of banks, which was already fairly pronounced in the early years of the State, continued to increase from 1956 onwards. The share of the three largest banks rose from about 55 % in the early fifties to two-thirds and above in recent years.[28]

A number of factors were responsible for these changes in the structure of the system, the important ones being the rapid economic development of the country and the key role of banking institutions in the financial system as a whole. The rapid economic growth fostered the expansion of many banking institutions; but the main benefactors were the large banks which alone were able to supply the rapidly growing economic units with the amount of credit they required. A considerable proportion of development loans from governmental deposits was channelled through the large institutions, and it was only natural that their recipients were inclined to use other services of the same institutions. The large banks, particularly Bank Leumi Le-Israel and the Israel Discount Bank, occupied central positions in certain spheres of business that developed more rapidly than others — foreign currency and the financing of imports and exports, underwriting and brokerage of securities, etc. Moreover, the three largest banks were also the first to realize that the development of a network of branches was the key to rapid growth.[29]

The influence of the Bank of Israel on the banking structure was a less important factor and made itself felt mainly in two spheres. Firstly, it refused to give license to new banks, except in special cases. Had it not been for this policy, it is virtually certain that the number of banks would have increased more than it did, though it is doubtful that this would have influenced the development of concentration. (In many cases those interested in setting up banks acquired existing institutions.) Secondly, the policy of monetary restraint, and the high liquidity ratios associated with it, weighed heavily mainly on the small banking institutions — many of which depended on credit transactions to a greater degree than their larger competitors. The radical decline in the number of credit cooperative societies was directly related to this factor.

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[27] A more detailed discussion of this subject will be found in Meir Heth, Banking Institutions in Israel.

[28] Use of various indices gives varying results, though there are no marked differences between the indices, except for that measuring the share of banking institutions in bill brokerage where the share of the small banking institutions is greater. (See Annual Reports of the Bank of Israel — Development of the Banking Institutions.)

[29] The progress of the three large banks was also connected, to an extent which is difficult to define in exact terms, with the sectorial structure of the Israeli economy. Together with the enterprises of the public sector (Government and Jewish Agency), the Histadrut sector and the private sector, there also emerged financing institutions which could be regarded as, in a sense, representatives of these sectors.

TABLE 11. Developments in the structure of the banking system at end of selected years: 1951—1966

	1951	1956	1961	1966
Number of banking institutions				
Banks	24	25	26	27
Credit cooperative societies	78	93	27	18
Number of branches				
Banks	86	175	496	608
Credit cooperative societies	38	79	72	62
Share (per cent) of the three large banks:				
(a) In total assets	62.2	57.5	66.5	63.0
(b) Demand deposits of the public	57.6	56.2	63.0	66.0
(c) In total income	54.0	51.4	66.0	64.8
(d) In total number of offices	25.3	31.4	54.9	54.4

Source: 1951—1961 — Heth, Banking Institutions in Israel.
1966 — Bank of Israel, Annual Report: 1966.

The dominant position of the three large banks is also related to the fact that their influence extends beyond the confines of the commercial banking market. This is especially true of the financial institutions, whose share in the total assets of the financial intermediaries is already approaching that of the banking institutions (see Table 7 above); particularly important are the group of mortgage banks and the group of institutions giving long-term loans for development purposes. The three large banks have a not insignificant share in the ownership of the important financial institutions — each has subsidiary companies in the two groups mentioned above, and they are important shareholders in the main Government bank for financing industry, the Industrial Development Bank.[30]

There is no distinction in Israel between deposit banking and investment banking. The large commercial banks play leading roles in the securities market — both in underwriting and in trade on the stock exchange. The securities market is not yet a central factor in financing the business sector in Israel, but the commercial banks, particularly the large ones, have entrenched themselves in this market, which is likely to develop in the future. (A more detailed discussion appears later in this survey.)

30) Important subsidiaries of Bank Leumi — General Mortgage Bank, Otzar La'taasiya, and the Bank Leumi Investment Company; of the Israel Discount Bank — Israel Development and Mortgage Bank, and the Discount Bank Investment Company; of Bank Hapoalim — the Housing Mortgage Bank and the Israel-American Industrial Development Bank. Note should be taken of the decisive role played by the Government in mobilization and allocation of long-term capital. The banks' subsidiaries are not free to decide on the sums mobilized and their allocation, and from this point of view they may be regarded a semi-governmental financing agencies.

It should be noted that some of the commercial banks have gone into investment banking and invested — generally through their subsidiaries — in non-financial enterprises. This is not the place to dwell on the advantages and disadvantages of this approach to banking which is prevalent in some European countries and in Japan, but it is clear that it calls for a good deal of care and restraint on the part of the banks. Institutions whose important liabilities consist of demand deposits must be highly liquid and keep their investments in affiliated companies within reasonable bounds. It is desirable that restrictions on investments of this sort should be defined in the Banking Law.[31] The collapse of the I. L. Feuchtwanger Bank and the Credit Bank in early 1967 was connected with excessive lending to businesses in which the shareholders and directors of these banks had invested. The collapse underlined the weakness of the existing banking ordinance, which was passed under the British Mandate and did not include any provisions as to the scope and quality of business allowed to the commercial banks or the scope of their transactions. At the time of writing, amendments to the Banking Ordinance are being prepared which are designed to correct some of the deficiencies revealed in the law by the above affairs.

8. THE ASSETS AND LIABILITIES OF THE BANKING INSTITUTIONS

After discussing monetary developments indicating certain characteristics of the balance sheets of the banking institutions — a rapid rate of growth of demand deposits and less liquid desposits, and relatively high liquidity ratios — we will now attempt to give a more systematic, though brief, summary of the changes which have taken place in the structure of their assets and liabilitites (see Table 12).

Banking institutions in Israel differ from commercial banks in the English-speaking countries, in the composition of each major category of their assets, more than in the relative weight of such categories in total assets. Thus, for instance, their liquid assets are between a quarter and a third of total assets — but they consist mainly of deposits in the Bank of Israel (and, prior to its establishment, in other banks). Securities are hardly used as a secondary source of liquidity, and their share in total assets is thus relatively low. From certain aspects the fixed-term deposits in the Bank of Israel are, however, similar in some respects to Government securities. They bear interest at a not insignificant rate, and they are highly liquid: the depositing banks can withdraw them at any time without loss of principal, though with some loss of interest. (Liquid assets in 1951 included a considerable amount of Treasury bills[32] and — as will be explained below — they were a primary liquid asset worth the while of the banks to hold, for they could then "purchase" reserves by giving credit.) In 1966 the liquid assets included a large amount of deposits held with the Bank of Israel in connection with restitution payments, which were liable to 100% liquidity. This group of assets is an additional example of the

[31] In many cases it is not the commercial bank which invests in non-financial enterprises but concerns outside banking acquire banks in order to help finance their undertakings. Restrictions are particularly important in cases of this kind.

[32] Treasury bills were a liquid asset because the Issue Department of Bank Leumi undertook to buy them from the banks should the need arise.

unusual structure of the balance sheets of the banking institutions in Israel — both the very existence of this type of deposits and the fact that they must be redeposited in their entirety with the central bank, are unique phenomena.

TABLE 12. Assets and liabilities of the banking institutions at end of selected years 1951–1966*
(percentages)

	1951	1956	1961	1966
Total assets = total liabilities (IL millions)	279	780	1,915	5,284
a. Distribution of assets	100.0	100.0	100.0	100.0
Liquid assets	34.3	28.2	25.8	32.5
Ordinary loans to the public[1]	42.5	34.7	38.2	35.8
Loans to public from Government deposits	8.4	23.0	12.1	8.7
Foreign currency assets[2]	3.3	–	9.8	8.9
Securities	6.2	6.4	6.7	6.0
Other assets[3]	5.4	8.0	7.4	8.1
b. Distribution of liabilities	100.0	100.0	100.0	100.0
Equity capital	4.4	4.9	3.7	5.7
Demand deposits	56.0	41.3	32.6	23.8
Less liquid deposits	8.8	13.2	33.9	28.8
Deposits earmarked for loans[4]	9.7	26.4	13.5	20.5
Foreign liabilities	1.1	–	8.9	13.5
Other liabilities	20.0	14.2	7.4	7.2
Contingent accounts (IL millions)	35	183	434	1,672
Contingent accounts (as percentage of total liabilities)[5]	12.5	23.9	22.7	31.6

* There are discrepancies between the data of various years owing to changes in the reporting systems.

1) Including loans from institutional deposits (mainly provident funds) earmarked for loans. The share of loans of this type increased throughout the sixties and in 1966 they formed 11.3% of all assets.

2) Data for 1961 and 1966 are not comparable with data for 1951. Assets include balances held in foreign banks and loans in foreign currency.

3) Including Government loans, real estate, and other accounts.

4) Of the Government and other institutions. Government deposits earmarked for loans formed: 9.0% in 1950; 21.1% in 1956; 10.6% in 1961 and 9.0% in 1966.

5) Including bonds, loans and other accounts (in 1951 also deposits of banking institutions).

Sources: 1951 — C.B.S. Statistical Abstracts.
1956 on — Annual Reports of the Bank of Israel.

The share of loans in total assets is also not particularly low; but a large proportion of the loans are not granted solely at the discretion of the banking institutions. Until the mid-fifties a considerable amount of credit was given from Government deposits,[33] and afterwards the banking institutions lent an ever-growing amount out of deposits of other institutions. Depositors of funds earmarked for loans give directives as to the allocation of credit from their accounts. Ordinary credit to the public also includes considerable sums of directed loans, exempted from the ordinary liquidity requirements, to branches which the Government wished to encourage. (At the end of 1966 the credit balance of the banking institutions was distributed as follows: ordinary, without direction — 40.9%[34]; directed — 14.4%; from institutional deposits — 24.5%; from Government deposits — 20.2%.)

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[33] Before the establishment and in the early days of the development of such financial institutions as the Industrial Development Bank and the Bank of Agriculture, many of the loans from the Government's Development Budget were channelled through the banking institutions.

The ability of the banking institutions to give credit to clients at their own discretion is not, however, as restricted as it might appear from the data presented here. During the sixties the granting of credit through "bill brokerage — without control of the purposes of the credits or the rate of interest — developed rapidly. The monetary significance of this development will be taken up again later; let us merely note here that the balance of bills negotiated amounted at the end of 1966 to IL 1,021 million, while ordinary bank credit (excluding credit from deposits earmarked for loans) was only IL 1,257 million. (In 1967 the volume of bill trading credit declined. At the end of June 1967 ordinary bank credit was IL 1,637 million, trading had dropped to IL 742 million.) The expansion of bill brokerage was reflected in the growth of contingent accounts, which include guarantees given by the banking institutions to clients purchasing bills through them.[35]

The most interesting development in the distribution of liabilities of the banking institutions is the decline in the share of demand deposits — as a source of funds — a decline unconnected — as it is in many countries — with the growth in the share of ordinary savings and time deposits of the public. Whereas in the early fifties the amount of Government deposits for loan purposes increased, the importance of this source declined at the end of the decade and the share of non-liquid deposits began to grow — but these were mostly deposits by restitution recipients of the Pazak and Tamam types. Here again, although the growth of these categories of deposits was significant from the monetary point of view, they are not an important source of funds from the banking aspects, since the banking institutions deposit all the sums in the Bank of Israel.[36] Foreign liabilities whose importance has increased in recent years, consist of deposits of foreign residents called Patach, the Hebrew initials for DFR, whose rate of growth slowed down in 1962[37]; and of loans from financial institutions abroad, which have grown considerably since 1963.

34) Part of the non-directed credit is not in fact free, since the banks allocate some of their non-directed credit as participation in the export funds. An adjustment taking this into account shows that the share of directed credit is 18%, while that of non-controlled credit is only 37.3%.

35) Some of these transactions were carried out without guarantee, though their number has declined during the last year under pressure from the Bank of Israel and the shock experienced by the banking system at the beginning of 1967.

36) These transactions are of course a source of income, but, however considerable the total of what are deposits only in the formal sense, they do not serve as a basis for the giving of credit.

37) The flow of deposits of foreign residents slowed down after marked rises in the rates of interest on the capital markets of Europe and the United States, and more stringent supervision was imposed on the way the banking institutions used these deposits.

The weight of equity capital in relation to total liabilities is not large, although since 1963 it has been greater than in any other period.[38] It should, however, be noted that the liabilities of the banking institutions include a number of unusual items, mainly deposits of restitution recipients, whose proportionate weight has increased precisely in recent years. On the other hand, the importance of contingent liabilities, such as guarantees for bill brokerage transactions, has increased of late. These changes complicate any comparison of capital adequacy during the period under review, as well as international comparisons. (If contingent liabilities are added and restitution deposits subtracted, the ratio between equity capital and liabilities amounted to 3.3% in 1961 and 5.1% in 1966.) There are also considerable differences among various banking institutions regarding the ratio between equity capital and total liabilities. The share of equity capital is — on the average — lower in the large banking institutions.

So much for the structure of assets and liabilities, which, as we have pointed out, is not determined only on the basis of business considerations by the banking institutions. We will now move on to a description of the most important external factor which exerts its influence upon the scope and nature of the banking institutions' transactions — the activity of the Central Bank and its monetary policy.

9. THE BANK OF ISRAEL AND THE ADMINISTRATION OF MONETARY POLICY

From 1949 to 1951 the rate of monetary expansion was extremely rapid (see Table 1). The Government used the banking system for deficit financing on a wide scale without making any real effort to limit bank credit to the public: treasury bills, by means of which the Government obtained credit, were declared liquid assets and formed a basis for the expansion of credit to the public. Only in November 1950 were the first liquidity regulations issued, which obligated the banking institutions to maintain minimum liquidity ratios of 45% on most types of deposits. (During the period preceding the establishment of the Bank of Israel, the supervision of the banks was the function of the Ministry of Finance.) In April 1951 the issue of new treasury bills — which had had a marked effect on the expansion of credit to the public — was discontinued. At the same time, the average liquidity ratio was raised to 50% and deposits in addition to the balance as of 31.3.1951 were made liable to a marginal liquidity ratio of 75%. This was the first severe measure in a long series of attempts to slow down the rate of monetary expansion by means of variable liquidity ratios. This is not the place for a detailed description of all these changes, and mention will be made therefore only of trends of development and the difficulties which faced the monetary authorities.[39]

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38) Equity capital increased from IL 107 million at the end of 1962 to IL 304 million at the end of 1966. This increase of IL 197 million was 8.2% of the increase in total liabilities of the banking institutions.

39) For monetary developments prior to the advent of the Bank of Israel, see Don Patinkin, Monetary and Price Developments in Israel, 1949 — 1953, *Scripta Hierosolymitana* and thereafter the *Annual Reports* of the Bank of Israel.

Since the control exercised by the Bank of Israel over the quantity of reserves at the disposal of the banking institutions was limited (the reason will be discussed below), the problem faced was twofold: to limit the ability of the banking institutions to use these reserves for the giving of credit; and to ensure that, in spite of this limitation and of the mounting demand for credit created by the restrictions of the interest law and by inflationary pressures, the banking institutions would direct credit to those branches which the Government wished to encourage.

The first attempts to solve the problem were made even before the establishment of the Central Bank and consisted of two main measures:

(a) The imposition of marginal liquidity ratios higher than the average (in April 1953 the marginal rate was raised to 90%); this slowed down the expansionary process arising from additional reserves, but led to the average liquidity ratio being different from bank to bank, in keeping with the rate of deposit accumulation in each of them — and this complication was cancelled only in 1958.

(b) Even a marginal liquidity ratio of 90% could not prevent the expansion of credit since the banks acquired additional liquid assets, and from June 1952 they were also permitted to grant credit exempted from the liquidity requirements for purposes approved by the Ministry of Finance. To prevent the expansion of ordinary credit to the public, the banking institutions were obligated at the beginning of 1954 to "stabilize" credit at the level of 30.11.53. Any additional credit had to receive special approval.

The Bank of Israel, founded in 1954, continued with this control system until the beginning of 1958, while making a number of changes designed to plug the gaps in the existing regulations.[40] In early 1958, the Bank unified the average liquidity ratios, and changed the system of credit direction by combining quantitative and qualitative control. It laid down a liquidity ratio of 58%, from which the banks were allowed to deduct up to 20% for loans approved by the Bank of Israel.[41] The need for directing credit was due to the fact that the market was not in equilibrium — the demand for credit at the legal rate of interest was beyond the ability of the banking institutions to supply it. They chose to divert to their regular clients the credit they were able to give and general directives concerning the preferred status of certain branches were insufficient to ensure changes in the allocation of credit.[42] There was, however, no difficulty in ensuring the allocation of credit to preferred sectors or enterprises, if this credit was added to the sum the banking institution could grant under the liquidity regulations. When the liquidity ratio was raised to 62% at the end of March 1961, the directed credit quota was fixed at 22%. Further amendments to the liquidity ratios occurred as follows: end of September 1961 — raised to 64% (without changing the quota of directed credit); beginning of January 1963 to October — gradually raised to 69%; June 1965 — lowered to 68% (directed credit quota raised to 23% and later to 24%, but only for banking

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40) These changes concerned the definition of deposits subject to liquidity requirements. Deposits in the Bank of Israel became the main recognized liquid assets.

41) For some time it was possible to include foreign currency in liquid assets, and the compulsory liquidity ratio was then 68%.

42) Before the establishment of the Bank of Israel the banking institutions acted under general directives to avoid granting credit of certain types and to allocate about 20% of their credit balances to agriculture.

institutions which had contributed their full share to export credit funds); July 1966 to December — decreased gradually to 65%, together with raise in directed credit quota to 25 %.[43]

The combination of quantitative and qualitative control facilitated not only effective direction of considerable amounts of credit but also quantitative changes.[44] Contraction or expansion in directed credit permits affect the effective liquidity ratio of the banking institutions.

As will be pointed out below, to 1966 the Bank of Israel refrained from using a policy instrument available to it by law, namely open market operations, and this because of the narrow dimensions of the local capital market and the reluctance of the Government to have Bank of Israel sales compete with its issues. Another instrument — rediscounting — was used for exceptional purposes until 1966. The Bank of Israel did not use rediscounting to influence the rates of interest, as is customary in a number of countries with developed money markets. Nor did it enable the banking institutions in need of additional liquid assets to resort to rediscounting in the course of their regular transactions, and up to 1966 the problem of supplementary liquid assets was never serious. To the extent that the Bank of Israel discounted bills, this was done for credit-directing purposes. In recent years the Bank of Israel has participated in export funds by discounting bills at a low rate of interest. This enabled the banking institutions to participate in such funds — where they received interest at the customary rate, while the participation of the Bank of Israel enabled credit to be given to exporters at a lower rate.

The data given in Table 1 above show that the success of the Bank of Israel in restraining monetary expansion was only partial. In most years since the establishment of the Central Bank, the means of payment increased more rapidly than the growth of real national product — a development which contributed to the inflationary pressures prevailing in the economy up to 1966. The achievements and weaknesses of Israel's monetary policy should be judged in the light of the difficulties caused by the conflict between two policy goals: accumulation of foreign currency reserves added liquid assets to the banking institutions, and was a negative factor from the point of view of preventing inflationary pressures; but on economic and political grounds such accumulation was considered desirable. To this end the Government adopted a policy of encouraging investments and receiving loans from abroad, despite the fact that this hampered the policy of monetary restraint.

The effectiveness of monetary policy was limited by a number of factors connected with the working of the monetary expansion mechanism on the one hand, and with the way it operates on economic stability, on the other hand.

(a) An addition to the money supply is created when the Central Bank acquires assets or gives credit. This addition is direct when cash is issued, and indirect when the banking institutions acquire additional liquid assets, or when they expand credit while lowering their liquidity ratios. The Bank of Israel may accordingly prevent an addition to the means of payment either by refraining from granting credit to the public and the Government, or by offsetting such an addition by selling assets to the public and the banking institutions. As regards the first method, it should be noted that whereas the granting of credit to the public is subject to the sole discretion of the Bank, it cannot in fact entirely avoid granting of credit to the Government, if it wants to borrow.[45]

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[43] Details of the changes are given in Annual Reports of the Bank of Israel.

[44] There is no room here to discuss the question of whether direction of credit is at all desirable. There are strong arguments against supporting preferred branches with cheap credit, but it is assumed in this survey that the preference was justified and that in the prevailing market conditions administrative control was necessary.

The Bank is also obliged to acquire foreign currency assets,[46] but their expansionary effects may be prevented by selling Government securities or by other contractionary operations such as raising the liquidity ratios incumbent upon the banking institutions.

(b) Although an addition to the money supply does not of itself lead to inflationary pressures (these arise from aggregate demand, which expands more rapidly than the local supply of goods and services), it does have a direct effect on the expansion of demand (real balances effect), and the factors contributing to monetary expansion generally reflect the existence of demand pressures, the implementation of which is rendered possible by an addition to the money supply. It follows that the prevention of monetary expansion is liable to stem the implementation of inflationary pressures, although it does not directly affect the causes of those pressures.[47]

The granting of credit to the public by the Bank of Israel has not contributed a great deal to monetary expansion.[48] Credit to the Government was a more important factor, particularly in the years 1955—57, 1964 and 1966, whilst the acquisition of foreign currency was the most important expansionary factor: total credit of the Bank of Israel to the Government and the public increased from IL 186 million at the end of 1955 to IL 769 million at the end of 1967 — an increase of IL 583 million[49]; while net foreign currency balances at the disposal of the Bank of Israel grew from IL 43 million to IL 2,445 million in the same period — a rise of IL 2,402 million, or about four times the increase in credit.

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45) According to the Bank of Israel Law (para. 45), the Bank is authorized to give the Government provisional advances to an amount not exceeding 20% of the total regular budget for the financial year. This arrangement is intended to enable the Government to finance temporary deficits, and it is difficult for the Bank not to allow its utilization. If it afterwards transpires that the deficit is not temporary and the Government cannot repay the debt at the end of the financial year, as the law requires, then the Government is able to have a law enacted converting the advance into a long-term loan, and the Bank is again powerless to prevent such a move.

46) The control of foreign currency makes it mandatory to sell foreign currency reaching Israeli residents to the Government, and the Bank acts as an agent of the Government in buying this currency. It would be possible to prevent the expansionary monetary effect of purchasing foreign currency were the Government to utilize part of its local receipts to this end.

47) Since monetary policy does not affect directly the causes of inflationary pressures, but rather the possibility of their being realized, its restraining impact is liable to be effective. An expansionary monetary policy can be effective only if it succeeds in affecting factors contributing to an expansion of demand — and this does not fall within the sphere of its direct influence.

48) Expansion of credit to the public was an important factor in total monetary expansion, as shown in Table 2, but this is mainly due to the activity of the banking institutions. Expansion of credit by them was nevertheless made possible by the liquid assets available to them — and these were due to the operations of the Bank of Israel.

49) The change throughout the entire period does not, of course, reflect the monetary effects of the granting of credit to the Government in each year — in some years, the withholding of credit from the Government might have been an important contractionary influence.

The limits of the Bank of Israel's ability to withhold credit from the Government has been pointed out, and, in view of the figures just mentioned, even if the Bank had given the Government no credit at all this would have prevented only a small part of the expansion. The major monetary problem of the last decade has been the accumulation of foreign currency balances, which was, as stated, one of the policy objectives of the Government and of the Bank of Israel. The problem could have been solved had the Government allocated some of its local receipts for the purchase of foreign currency or contributed to monetary contraction by creating budget surpluses. The fact that this was not done must of course be considered in the light of the financing problems imposed on the Government by security requirements, the needs of immigrant absorption and the development of the economy. But in the absence of a budgetary solution to the problem of foreign currency accumulation, the Bank of Israel was called upon to stem the resulting expansion. The measures taken were of two different kinds.

Firstly, recipients of restitution payments were given an opportunity of depositing their receipts in foreign currency, or in deposits value-linked to foreign currency, and receiving a relatively high rate of interest on these deposits — measures the great importance of which may be appreciated in retrospect.[50] The placing of restitution receipts in Pazak and Tamam accounts offset a considerable part of the potential expansion due to the accumulation of foreign currency reserves (the growth in the balances of these deposits between 1955 and 1967 totalled about IL 1,400 million). As regards the immediate monetary effect, the attraction of funds to Pazak and Tamam accounts is similar to sales on the open market. However, the high liquidity of the deposits constitutes a monetary problem in the long run[51] and reduces the flexibility of monetary policy. The second measure implemented was a gradual raising of the liquidity ratios, as described above.

These measures were inadequate to prevent a rapid increase in the money supply in most years since the establishment of the Bank of Israel. The average rate of growth fell below 15% per annum in only five of the years between 1955 and 1967, and in all but three of those years it exceeded the rate of growth of real national product by more than 5%. In 1956—58 there was a limited accumulation of foreign currency balances, but expansion of credit — especially to the Government — was not prevented. Between 1959 and 1961 the accumulation of foreign currency grew, but a decline in credit to the Government offset part of the considerable expansion in credit to the public — in 1959—60 at any rate. In 1962—63 foreign currency accumulation reached such proportions that the tightening of the liquidity regulations could not prevent a rapid growth in the money supply. In 1964 and 1966 there was little increase in the means of payment due to the limited accumulation of foreign currency.

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[50] The incentives were reflected in the linkage of the deposits to the exchange rate (Tamam deposits are even denominated in foreign currency) and in the payment of interest of up to 7% on Pazak deposits. (Prior to the devaluation of 1962 a bonus was awarded on long-term deposits.)

[51] Securities sold on the open market carry limited liquidity — the extent of which depends on market conditions. Pazak and Tamam deposits, on the other hand, are highly liquid and may be withdrawn in full at any time without loss of principal. Moreover, the availability of so liquid an asset is likely to change the preferred asset composition of the public — reducing, for instance, the stock of means of payment held relative to planned transactions.

Was it possible to slow down the rate of growth of the money supply to about 10% per annum (which was the average rate of growth in real product between 1955 and 1965) by means of variable liquidity ratios alone? If we assume that the amount of cash would have grown as it in fact did, while the quantity of liquid assets at the disposal of the banking institutions changed as it did in fact change, then we reach the conclusion that such a result was not possible between 1962 and 1965. Until 1961 a growth rate of 10% a year could have been reached, if the average liquidity ratios had been raised to 45—50% — considerably higher than the effective ratios prevailing at the time but still within the range attained in 1963 onwards. Achieving the desired results in 1962 to 1965 would have necessitated raising the liquidity ratios to an average level of 60 to 90%, which was out of the question.[52] It thus transpires that effective results were not possible without action to reduce the volume of liquid assets at the disposal of the banking institutions. This could have been done by open market operations, but the Bank of Israel did not utilize this instrument until 1966. This is not the place to discuss at length the reasons for the Bank's attitude and only three will be presented in brief:

(a) The securities market in Israel is limited in comparison with markets in countries where open market operations are customary (and there are not many of these). Those who opposed the use of this instrument in Israel claimed that open market operations on any considerable scale would be liable to undermine the smooth working of the small market and lead to sharp fluctuations in quotations. (There was also the practical and psychological difficulty of using it, since up to 1966 it was clear that such use would have to be one-way: sales only, aimed at monetary contraction.)

(b) As already pointed out, the Ministry of Finance did not support its use on the grounds that sales on the open market would compete with the mobilization of capital through the sale of Government securities and upset budgetary calculations.[53] Without the cooperation of the Treasury, the Bank of Israel was unable to act, since a competitive effective rate of interest was conditional upon income tax concessions for purchasers of bonds.

(c) Activities on the free market would have necessitated relaxation of the restrictions of the interest law, as the proposed return had to be competitive with that on other market instruments, which in many cases gave a return much higher than the maximum laid down by the interest law.

10. INTEREST POLICY AND THE BILL BROKERAGE MARKET

Severe monetary contraction would have had to be accompanied by a steep rise in the rates of interest. It would not be quite accurate to say

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52) This calculation is extremely rough, but serves to illustrate the dimensions of the problem. Even though the liquidity ratio never rose above 50%, the Bank of Israel paid the banking institutions interest on their liquid assets. Liquidity ratios of 75% and more would have necessitated considerable support of the banking institutions and would have led to other undesirable results.

53) This refers both to sellable amounts and to interest rates, which would have had to compete with the return on securities to be sold on the open market.

that it was unwillingness to bring about this result that foreclosed a more severe policy of restraint by the Bank of Israel, but there is certainly a reluctance In Israel to contemplate the possibility of a rise in the rate of interest above what seems to be "reasonable."[54] This attitude is reflected in the Interest Law, which laid down maximum rates lower than those prevailing in the credit market, disregarding the allocation functions the rate should perform in smoothly functioning financial markets.

Until the beginning of 1957 the rate of interest was limited to a maximum of 9% a year by the Ottoman Interest Law. In view of the rate of the rise in prices (see Table 1), this limit could not be effective. The interest rates in the free market reached 24–30% in the years of rapidly rising prices and many of the banking institutions also "broke through" the interest ceiling, either directly or by collecting supplementary fees of various kinds. Nevertheless, most credit of the large banks and loans from governmental and public institution funds seem to have been given at a rate lower than 9%, and this led to sharply increased demand for cheap credit. Complaints of a "shortage" of credit and pressure by interested groups undoubtedly contributed to some relaxation of the policy of monetary restraint.

This relaxation found expression in the granting of directed credit outside the liquidity requirements – generally at comparatively convenient rates of interest. Assuming that it was justified to grant credit on easy terms, particularly to branches in whose development the Government was interested,[55] still there was no economic logic in the attempt to control the price of all bank credit simultaneously with monetary restraint during a period of inflationary pressures. It is impossible to exercise control over the price and quantity of credit at one and the same time – when the price is lower than the equilibrium level of supply and demand.

This fact was ignored in 1957 when it was decided to repeal the Ottoman Interest Law. Instead of cancelling it entirely, it was replaced by a law based on similar principles, but with changes and improvements in the procedures for determining the maximum rate of interest and for implementation of the restrictions laid down by law. Within a fairly short time it became clear that the new law was not more effective than its predecessor – its application depended on the readiness of borrowers to summons the lenders (that is, take up charges in a court of criminal law). The borrowers did not of course wish to block the sources of their much-needed credit. The free credit market therefore continued to exist; moreover, from 1961 onwards it even attained a new dimension with the growth of the bill brokerage market.

Until the emergence of this market, the banks – particularly the large ones – played a marginal role in the free credit market. A number of developments (it is difficult to determine which was the most important) changed this situation in 1961:

(a) The banking institutions had more difficulty than in the past in meeting their clients' demand for credit at the legal rate of interest. Investment in the economy expanded rapidly, whilst the Bank of Israel raised the liquidity ratios in an attempt to stem the increase in the money supply.

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54) Examples of a "reasonable" interest rate have been taken from countries with a level of development different from that of Israel and whose price level was much more stable.

55) Low interest then serves as a subsidy. As against this practice it may be claimed that the use of interest as a subsidy-giving instrument is completely unjustified – it has an adverse effect on the efficient allocation of capital, and it would be much better to give the subsidy directly.

(b) The stepped-up flow of personal restitution from Germany increased the supply of capital seeking investment outlets. (In 1962 investments from abroad also began to grow considerably.) The banks saw that they could serve their borrowing and lending clients by negotiating bill-credit between them — while they were unable to pay attractive interest rate on deposits in Israeli currency and to satisfy the demand for ordinary banking credit.

(c) A legal formula was found which was thought to avoid the Interest Law, so that the banking institutions which had previously hesitated to become involved in the free market also began to engage in bill brokerage,[56] mainly after it became clear to them that it was a very profitable business.

The development of the bill brokerage market was extremely rapid — at the end of 1966 bill credit amounted to two-thirds of ordinary bank credit. What were the monetary effects of the emergence of this market and was it possible to forestall it by lowering the liquidity ratios, as the banking institutions claimed?

The bill brokerage market had an expansionary effect in so far as it led to the release of liquid financial assets of the public, previously frozen as a result of the liquidity requirements and the characteristics of Pazak and Tamam accounts.[57] It is difficult to say what was the degree of expansionary effect, but some there almost certainly was, and it may be that the growth in the velocity of circulation of the money supply was one of its results.[58] In other words, it might be said that as a result of the development of this market, more of the planned expenditures could be carried into effect than would have been possible in its absence.

It is, however, doubtful whether reduction of liquidity ratios, which was unjustified in view of the rate of growth in the means of payment described above, would have prevented development of the market. The inflationary pressure prevailing in the years when the bill market was expanding would have swallowed up any ordinary addition of credit — particularly if it had been granted at a relatively low rate of interest. This, in turn, would have further increased the inflationary pressure, the rise in prices and, thus, the demand for credit as well. A free credit market, in one form or another, would have emerged in any event in the conditions of 1961 — 62 because of the restrictions of the interest law; and perhaps it was precisely the raising of the liquidity ratios that slowed down its expansion by contributing to a rise in the interest rate on the free market. (A change took place in this situation in the second half of 1966, when the rise in prices was stemmed.)

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56) The mediating bank received brokers' fees, ranging from 4 to 6%, according to the degree of risk, and the lender received 11% — much more than the bank could pay on deposits and yet still within the maximum of the interest law. (Neither of the parties in the transaction thus received more than the maximum permitted.)

57) Pazak and Tamam deposits do not affect the level of demand in the economy, as they do not serve as a basis for domestic credit expansion (they may have an indirect effect if their holders consider them a substitute for means of payment and therefore reduce the "stock" of money at their disposal).

58) The changes in the velocity of circulation were not striking — it declined rapidly in relation to the national income between 1962 and 1963 and rose thereafter as follows: 1963 — 4.13; 1964 — 4.25; 1965 — 4.67; 1966 — 4.71. It should be noted, however, that these changes reflect a combination of different factors and not just the effect of the bill brokerage market.

The Bank of Israel took measures to curtail the bill trading market in March 1965, when it prescribed a ceiling for the volume of financial guarantees that the banking institutions were allowed to give. This ceiling was set at three times the equity capital or one-and-a-half times the financial assets — whichever was lower. Pressure was similarly brought to bear on the banking institutions to reduce the balance of non-guaranteed brokerage. These restrictions were mainly aimed at preserving the safety of the banks and preventing undue risks in this type of transaction, but they also had monetary significance in that they reduced the potential expansion of brokerage transactions via the banks. Proposals were also put forward to require holding of liquid assets against guarantees in brokerage transactions, with a view to further slowing down the expansion of such transactions. It is, however, doubtful whether it would have been possible to prevent the rapid development of this market in the conditions prevailing in the economy in those years: inflation and heavy demand surplus, on the one hand, and the interest low ceiling on the other. Drastic measures to curb bill brokerage by banking institutions would merely have caused this type of transaction to move outside the framework of the banks.

It would appear, therefore, that the existence of the bill brokerage market reflects the investors' awareness of the returns their investments could bring them, and that its development was related to a considerable degree to the restrictions of the interest law. Such a market might possibly have emerged in the course of time even if the interest law had been repealed — a money market where short-term securities and commercial bills are traded is customary in many countries. It may be assumed that in this event the market could have developed more independently of the commercial banks. The close relationship has proved undesirable for two main reasons:

(a) The banking institutions have undertaken sizable risks by giving guarantees for repayment of a considerable part of the bills sold through their good offices. That some of them went too far was reflected in several banking institutions whose positions were badly shaken. The tendency to undertake undue risk is apparently connected with the fact that the bank does not lend its own funds and there were therefore instances where much less control was exercised over such guarantee transactions than over ordinary credit transactions.

(b) The lenders, the purchasers of the bills, regarded the transaction as a gilt-edged investment owing to the bank guarantee. In this way they differed from the purchasers of commercial bills in other countries who anticipate a higher return than that paid on a bank deposit but who know that the risk is also greater.

It may be concluded that what is undesirable about close connection between the banks and the bill brokerage market is the lack of a clear distinction between the deposit and credit transactions of the bank itself and the brokerage transactions. Such blurring of the line is undesirable from the point of view of both the banks and their customers.[59]

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[59] In order to minimize the undesirable side-effects of bill trading, the Bank of Israel limited the volume of guarantees the banking institution was allowed to give as mentioned above. (See details in Bank of Israel, Annual Report 1965, pp.472—73.)

II. THE FINANCIAL INSTITUTIONS

We referred at the beginning of this chapter to the existence of close connections between the commercial banks — particularly the large ones — and the financial institutions. It was also mentioned that the rate of growth of the financial institutions sector was more rapid than that of other financial sectors. A key point to be remembered is that most of the important financial institutions are subject to such a degree of Government control and direction as to turn them into quasi-governmental financing agencies, even when they are not Government-owned. This situation is essentially due to the fact that a considerable part of the capital import which financed local investment was received by the public sector — while those private financial institutions which existed in the early years of the State were unable to mobilize domestic capital to meet the needs of a developing economy. The stagnation of the financial institutions in those years resulted from the paucity of domestic saving and the condition of accelerated inflationary conditions then prevailing in the economy (linkage arrangements began to spread only from 1953 onwards).

The main burden of financing development rested on the Government, aided, as mentioned, by a considerable capital import and the actual financing of investments took various different forms. Some of the investments were carried out by the Ministries themselves or the Government lent directly to bodies which carried them out. (The latter procedure was frequent in the case of Government corporations.) The Government also deposited considerable sums in the banking institutions and financial institutions which gave loans according to its instructions. At the same time the Government began to set up special purpose financial institutions completely or partially owned by it; first the Israel Bank of Agriculture and then the Industrial Development Bank of Israel, Tefahot-Israel Mortgage Bank, the Maritime Bank, etc. The establishment of these institutions was intended to sever the administrative link between the Ministries and the financial operations, and to bring about the mobilization of additional capital from other sources.

We will now examine the structure of the financial institutions sector, its methods of operation and the ways in which the Government influences its activities in the mobilization and allocation of capital.

1. THE STRUCTURE OF THE FINANCIAL INSTITUTIONS SECTOR

Most of the financial institutions in Israel are engaged in the granting of long-term credit. Table 13 gives the balance sheet totals of the various groups of financial institutions. At the end of 1966 there were 17 mortgage banks, whose assets formed more than 40% of the total in the whole sector. The relatively rapid growth of this group in recent years was connected with the emergence of Tefahot as a governmental mortgage bank through which flow funds previously lent directly by Amidar, the Government housing corporation, as well as a growing share of sums allocated to housing within the Development Budget. Tefahot and three other banks owned by the large commercial banks[60] have the major share of mortgage transactions.

Of the five banks for industrial investment, the Industrial Development Bank, owned partly by the Government, is by far the largest. We have already noted that the large commercial banks control institutions engaged in lending for industrial development; like a number of other banking institutions and business concerns, they also hold part of the equity capital of the Bank for Industrial Development.[61] The Government's Bank of Agriculture is the largest of the 18 institutions lending money to agriculture.

TABLE 13. Combined Balance Sheet of Groups of Financial Institutions, by Type: 1958, 1962 and 1966*

	1958		1962		1966		
	IL millions	Per cent	IL millions	Per cent	Number of institutions	IL millions	Per cent
a. Mortgage banks	115	21.9	570	31.4	17	1,866	41.1
b. Industrial development banks	100	19.0	605	33.4	5	948	20.9
c. Banks lending to agriculture	175	33.3	293	16.1	18	506	11.1
d. Financing of other branches	20	3.9	137	7.6	4	570	12.6
e. Investment companies	30	5.7	156	8.6	16	556	12.2
f. Mutual funds			13	0.7	7	32	0.7
g. Lenders to households**	85	16.2	40	2.2	18	66	1.4
Total	525	100.0	1,813	100.0	85	4,544	100.0

* Part of the data are based on estimates.

** In 1958 the institutions in this group included subsidiaries of banks which were afterwards liquidated by order of the Bank of Israel, for acting in circumvention of the liquidity requirements.

Source: Annual Reports of the Bank of Israel. (1958 — unpublished data of the Research Department.)

Most of the other institutions in this sub-sector are financial subsidiaries of the various agricultural settlement organizations and are engaged in the short term financing of their member settlements.

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60) General Mortgage Bank — Bank Leumi; Housing Mortgage Bank — Bank Hapoalim; Israel Development and Mortgage Bank — Discount Bank.

61) At the end of 1966 the Government owned about 26% of the ordinary shares, while the three large banks held some 22% of this class of shares.

The 16 investment companies and 7 mutual funds that existed at the end of 1966 invest mainly in securities, though some are also engaged in lending of far from negligible quantities[62], chiefly out of Government deposits (or the proceeds of bonds sold with Government approval). The main investment companies are owned by large commercial banks — Bank Leumi and Bank Discount; and some of the smaller companies are also owned by banks. Most of the mutual funds are managed by the three large banks, or by companies owned by them. Another large company is Klal, which engages in the mobilization of investment capital abroad.

The 18 companies engaged in giving credit to households include two of relatively large size — Yahav (Civil Servants' Fund), and Otzar Lahayal — both under public ownership. These institutions, like others in the group, give a considerable part of their credit on a short-term basis.[63]

The degree of concentration in the transactions of the financial institutions is less than that of the commercial banks, but is still fairly strong. The three large financial institutions — all under full or partial Government control — held 45% of total assets of the financial institutions at the end of 1966. The seven large financial institutions owned by the public sector held 56% of the total, and the seven large institutions owned by the three main commercial banks 27% — so that 83% of the total was in the hands of 14 large institutions.

2. ASSETS AND LIABILITIES OF THE FINANCIAL INSTITUTIONS

The main function of the financial institutions is to grant long-term credit for investment purposes. Credit forms over 90% of their assets, as will be seen from Table 14. The distinguishing feature of financial institutions in Israel is that their discretion in granting and allocating credit is limited as a consequence of the nature of their sources of funds. Credit to the public from Government deposits formed more than half the assets of the financial institutions in 1958 — and a third even in 1966. A more detailed explanation of the asset structure of financial institutions should be preceded by an account of the sources of their funds.

Between 1958 and 1966 a considerable increase took place in the share of equity capital and debentures relative to deposits earmarked for loans. This change reflects, to some extent, a change in the sources of the institutions' funds, and, even more, in the technique of mobilizing capital. In 1961 about 60% of the liabilities of the financial institutions were to the Government and to other bodies connected with the public sector; the corresponding figure in 1966 was some 45% (see Table 15). This decline is smaller than the change in the share of Government deposits earmarked for loans — a development which reflects the fact that the Government supplied more of its share in the sources of the financial institutions' funds in the form of equity capital.[64] (Some of the deposits then existing were converted into shares.)

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62) The mutual funds are all of the same type — they invest in securities only and buy and sell participation certificates whose price represents the market value of the investments (Open-end Fund). The investment companies are very varied — some invest mainly in companies under their control or where they have influence in management, and their transactions are not limited to investments in securities.

63) Part of the sources of Yahav's and Otzar Lahayal's funds are demand deposits, but they are not regarded as banking institutions, as the negotiability of their checks is restricted.

64) At the end of 1966 31.1% of the equity capital of the financial institutions was from governmental sources.

TABLE 14. Assets and Liabilities of the Financial Institutions 1958, 1962 and 1966 (Percentage)

	1958	1962	1966
Total assets = total liabilities (IL millions)	525	1,813	4,544
a. Distribution of assets	100.0	100.0	100.0
Cash and bank balances	3.7	2.6	1.3
Credit to the public from own means	30.8	39.2	35.3
Credit to the public from Government deposits	54.7	31.5	33.7
Credit from other deposits earmarked for loans	1.8	7.3	8.6
Credit to the Government (incl. securities)	6.4	14.0	14.1
Non-governmental securities	2.1	4.9	6.3
Other assets	0.5	0.5	0.7
b. Distribution of liabilities	100.0	100.0	100.0
Equity capital	16.4	22.7	22.7
Debentures	7.7	23.4	22.6
Government deposits earmarked for loans	55.0	37.9	33.4
Other deposits earmarked for loans	2.8	5.2	10.1
Other deposits and loans	14.9	6.1	8.9
Other liabilities	3.2	4.7	2.3
Contingent accounts (IL millions)	42	116	197
Contingent accounts	8.0	6.4	4.3

Source: Annual Reports of the Bank of Israel (we have orderly data only from 1958 on).

The increase in the share of bonds was due to changes in the technique of mobilizing capital, which were connected with the wider participation of foreign investors and of provident and pension funds in the capital of the financial institutions. Mortgage banks founded by foreign investors, as well as the Industrial Development Bank and the Klal Investment Company, raised capital abroad by selling shares and bonds, mainly from 1960 onwards. (It should be noted that because of the expansionary monetary effect of the accumulation of foreign currency, it was wiser to limit permits for security issues abroad to mortgage banks during a period of rapid accumulation.[65]) The sale of debentures of the financial institutions on the local market increased as a result of two factors:

a) Until the end of the fifties the Government issued most of the securities sold in Israel. At the end of 1958 the quoted value of securities on the Tel-Aviv stock exchange was only IL255 million — of which more than 70% were Government loans, about 15% Government-guaranteed loans, and only about 15% was other securities. Government receipts from the sale of debentures were used, *inter alia*, for deposits in the financial institutions, which granted loans according to Government instructions.[66] In 1960 the Government began to allow financial institutions to raise capital through the sale of debentures and granted income tax concessions to purchasers, provided that the money would be allocated under governmental direction.[67] The considerable decline in the share of Government debentures in the sums of new issues during the sixties does not, therefore, reflect a corresponding reduction in Government control over the loan market.[68]

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[65] The boom in the real estate market in 1962-64, which was in itself an expansionary factor, helped to attract investment capital from abroad.

[66] It is, of course, not possible to say that the sales of securities were destined precisely for depositing in the financial institutions. The issues were one of the financial sources at the disposal of the Government, while such depositing was one of the uses to which the money was put.

b) Provident and pension funds, which are the most important pool of contractual saving in the Israeli economy, grew rapidly and purchased debentures of the financial institutions in large amounts from the beginning of the sixties. As early as 1957 the provident funds were obligated to invest most of their reserves in accordance with Government directions, as a condition for income-tax concessions. Moreover, in 1960 the recognition as "approved" investments previously given to deposits earmarked for loans was cancelled and nearly all the accumulated funds of the social insurance funds were utilized to purchase "approved" debentures. The financial institutions were among the major beneficiaries of this shift in policy.

An additional liability clause, whose importance increased greatly in the sixties, was that of non-governmental deposits earmarked for loans. These include deposits of public construction companies and of private contractors. Some of the money under this heading was in fact mobilized

TABLE 15. Distribution by Sector of Liabilities and Credit Balances of the Financial Institutions, in 1961 and 1966 (percentages)

	1961	1966
Total liabilities (IL millions)	1,185	4,544
Distribution of liabilities by sectors	100.0	100.0
Government	57.1	40.9
National institutions, local authorities, public sector companies	3.0	4.5
Rest of the world	6.5	11.2
Provident funds and insurance companies	7.2	11.2
Banking institutions	4.4	4.9
Private businesses, households, and non-profit institutions	7.2	8.9
Intra-sector transactions, accumulated profit balance, and not known	14.6	18.4
Balance of credit given (IL millions)	1,101	4,165
Distribution of credit by receiving sector	100.0	100.0
Construction and housing	31.1	33.8
Industry	28.0	20.5
Agriculture	18.1	7.9
Government	7.9	15.4
Services and trade	4.4	10.4
Public services	2.1	
Miscellaneous (including households)	8.4	12.0

Source: Annual Reports of the Bank of Israel.

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[67] For debentures granted "approved" status income tax on interest was limited to 25%. Such approval wa essential to ensure competitiveness of debentures on the market.

[68] Between 1962 and 1964 nearly the whole addition to Government debentures was in the form of the Short-Term Loan. (The Absorption Loan, being a compulsory loan, is not taken into account.)

on the free market by a technique similar to that of bill brokerage discussed above.[69] This was one of three sources of financing which were not subject to close Government control as to the use of the money raised. The two other were the issue of shares on the local market (banking and financial institutions mobilized considerable sums during the two boom years on the stock exchange, 1963 and 1964) and the sale of both shares and debentures abroad. Closer control was exercised over the use of the proceeds of issues abroad when pressure grew to halt the mobilization of this capital because of its inflationary effect.

It thus transpires from this description of the sources of funds at the disposal of the financial institutions that a considerable part of credit from what are formally their own resources is also subject to the directives of the Government concerning its allocation. This is due to the fact that their equity capital stems partly from Government sources and the issue of debentures is conditional, for the most part, on their agreement to allocate receipts according to the Government's wishes. The category of assets "credit to the Government" grew in the sixties with the development of the financing technique already mentioned, whereby the financial institutions issue debentures but are not free to give credit except with Government approval. This control is applied by the institutions depositing the proceeds of debenture issues with the Accountant-General, who in turn deposits the money in his account with the institutions.[70] This return depositing enables the Accountant-General to pay a higher rate of interest on the money "deposited" with him than he receives on the money he deposits; he is, therefore, able to cover interest differentials arising when he asks the financial institutions to lend the funds obtained from the sale of debentures at an interest rate lower than what they themselves pay on these debentures.

Non-governmental securities were another category of assets whose relative share increased. This development reflects the marked expansion of the investment companies group, which began in 1962-63 with the boom on the stock market.[71] The degree of Government control over this group of institutions is less than with any other group, but the vigorous expansion of these companies, which were based on investment in securities traded on the stock exchange, was halted by the slump in the share market. Companies whose investments were not restricted to marketable securities continued to develop, as did those which also engaged in lending, such as Klal and the investment companies of the Discount Bank and of Bank Leumi (the procedures used by these investment companies for raising funds and giving loans are not different from those of other financial institutions).

[69] The "deposit earmarked for loans" was in effect a liability of the contractor or building company which was sold by the mortgage bank to clients interested in linked investment (with the guarantee of the bank), at a rate of interest higher than that offered on bonds. (Here too the influence of the interest law makes itself felt. The problems of linkage are dealt with later in this chapter).

[70] The transfers to the Accountant-General formed between 20% of the proceeds of issues (in 1964) and 70% (in 1962). Between 1961 and 1966 about 50% of the proceeds of issues, which totalled IL 605 million, were transferred to the Treasury (domestic issues only).

[71] Between 1961 and 1964 the number of investment companies grew from 8 to 14 and the number of mutual investment funds from 1 to 6. Some of the new companies were set up by the banking institutions and by local business concerns, which took advantage of the possibility of raising capital on the share market and sold to the investment companies that set up their own investment portfolios.

Since most of the financial institutions specialize in granting credit to certain branches of the economy, the distribution of credit by branch more or less reflects the relative size of the various groups of institutions. The increase in the share of credit to housing and construction (and the mortgage banks) since 1961 is to a large extent the result of the rapid development of the Government-owned bank Tefahot. Conversely, the rate of growth of credit to industry and agriculture was slower in recent years. Credit to the Government, the proportion of which rose greatly, is mainly in the form of deposits with the Accountant-General, as described above.

3. THE PROBLEM OF VALUE-LINKING AND THE ROLE OF FINANCIAL INSTITUTIONS AS FINANCIAL INTERMEDIARIES

The decisive influence of the Government on the sources of capital and the allocation of the credit of financial institutions is reflected, inter alia, in the negligible importance of the private sector as a source of their funds. As may be seen from Table 15, less than 10% of the liabilities of financial institutions were to households (only about 4%), private businesses and non-profit institutions. It would thus appear that the financial institutions in Israel have no significant role to play as savings organizations, as is the case in many other countries. We may note two probable reasons for this state of affairs. Firstly, the most important component of household saving in Israel is investment in real estate, mainly in owner-occupied apartments. As a result, the relative importance of saving in financial assets declined.[72] Secondly, contractual saving, mainly in the form of contributions to pension and provident funds, is well developed in Israel (see more on this subject below) so that there would seem to be little room left for investment in other financial assets.

The deleterious effects of the legal ceiling on the rate of interest in the monetary sphere have been mentioned; the problem was still more serious in regard to incentives for long-term savings in financial assets. When the price level rises at a rate of 10 or 20% a year and more (as was the case between 1951 and 1954), changes in the rate of interest are inadequate to compensate the long-term saver — even if the rate is allowed to fluctuate without legal interference. Moreover, even a price rise at the annual rate of only 5—10% which continues for many years greatly reduces the likelihood that corrections in the rate of interest will in themselves compensate the saver for the decline in the real value of the principal. The deleterious effect of the inflationary process on saving in general, and on financial saving in particular, is well-known, but in the early years of Israel's statehood, prices were far from stable.

The need for some sort of a solution to this problem was recognized as long ago as the early fifties, mainly under pressure from the provident and pension funds, where most of the contractual savings in Israel had accumulated.[73] They faced no danger that savings through their organizations might stop — these were guaranteed by deductions at source under agreements between employers and the Histadrut. However, the marked decline in the real value of savings was resented by the members of the funds, while the funds themselves gradually began — under pressure from employees — to undertake obligations related to the wage level of the employee at pensionable age, rather than to the actual sum accumulated to his credit in the funds.

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[72] It might be argued that incentives to saving in financial assets would be likely to increase the ratio of saving. The assumption here is that the ratio of saving is given. When this is the case and savings in real estate constitute a large part of saving as a whole, it is clear that only a fraction remains for investment in financial assets.

In an attempt to restore the financial balance, steps were taken as early as 1953 to include value-clauses in loans given by pension and provident funds using either the consumers' price (cost-of-living) index or the foreign exchange rate. Linking the value of assets at the disposal of the funds gradually became a common practice, and with the increased Government supervision of these institutions since 1957 the share of value-linked debentures in total assets grew constantly. It is obvious that the linking of provident fund assets also meant the linking of their borrowers' liabilities, directly or indirectly.[74]

By the devaluation of 1962 the linkage system had taken root, and embraced nearly all long-term credit transactions in the economy — including, of course, loans of the financial institutions and the raising of capital by them in the form of debentures and deposits earmarked for loans. The existence of value-linking precluded the mobilization of unlinked, long-term loan capital.[75]

Despite the practice of value-linking, which would appear to contain a solution to the problem of safeguarding the real value of savings, the financial institutions did not succeed in attracting household savings on any considerable scale. Apart from the two reasons given above for the paucity of savings in financial assets, two more factors may be added. Firstly, Government control of the securities market prevented the issue of debentures whose proceeds would be used for purposes other than those approved by the Government and would bring in a higher rate of return than directed credit (and, as stated above, a competitive return on debentures depended on income-tax concessions to their purchasers). The second factor was the inability of the financial institutions to offer more attractive terms owing to the limitations imposed by the interest law, even if the Government had allowed them to issue debentures as they thought fit. Government — or Government-guaranteed — bonds were offered at or near maximum rates of interest, so that there was little possiblity of competition on the part of the financial institutions.[76]

[73] On this subject see Marshall Sarnat: *Saving and Investment in Provident Funds in Israel*, Falk Institute, 1966.

[74] The reference here is to borrowers whose linked assets have been acquired by the funds, and not other borrowers, like members of the funds, or employers in arrears with their payments.

[75] For a review of linkage problems in Israel, see; A. Morag, "Value Linking of Loans in Israel," in *Fiscal and Monetary Problems in Developing States*, Proceedings of the Third Rehovoth Conference (ed. D. Krivine), Praeger, 1967.

[76] It is not possible to determine whether and to what extent the financial institutions wished to compete, had they had the chance. Their business as Government agencies, both in raising capital and giving credit, brought them reasonable profits. See, for example, "The Financial Structure of Mortgage Banks from 1958 to 1964," *Bank of Israel Bulletin* 24, p.48.

Devaluation shook the value-linking practices profoundly. Firstly, it forced recognition of the fact that linkage to the rate of exchange had been ineffective — it had not fulfilled its function of preserving the value of the principal, but had rather added a burden (or given an advantage) in inverse ratio to the length of the period from the date of the credit transaction to the date of devaluation. Those who had taken loans a few weeks before devaluation were at once faced with a 66% increase in their debt. Since devaluation, therefore, linkage to the exchange rate has been cancelled except in special cases. Moreover, under pressure from borrowers hit by devaluation, the Government decided to grant various concessions with regard to the repayment of dollar-linked loans.[77] These alleviations forced the Government to compensate the financial institutions for the discrepancies created between the value of their linked liabilities and the value of assets the linkage of which was cancelled.

Since devaluation the system of linkage to the consumers' price index has also been undermined. Complaints of the heavy burden of financing and the desire to prevent price rises brought about a Government decision to waive linkage on loans to agriculture and industry (as early as 1963), and to other branches (in 1966). The borrowers pay a premium of 3—4% as "insurance" against increases in the consumers' price index and the Government undertakes to cover possible discrepancies between this premium and the actual rise in the index; the reason being that the debentures issued by the financial institutions remained linked to the index. Linkage was retained for part of the loans for housing (mainly existing loans), but here, too, the opportunity has of late been given to borrow without value-linking and even to convert linked loans given in 1966 and 1967 to non-linked loans at a higher rate of interest. In addition, the system of computing linkage differentials has been amended, following the recommendations of a public committee appointed by the Government.[78]

The problem of credit terms has been alleviated during the last year owing to the fact that the rise in prices has been curbed, and if this stability continues it may be possible to abolish the value-linking system entirely. The present situation, where only the liabilities of the end borrowers have been exempted from value-linking has far-reaching consequences as regards the status of the financial institutions as financial intermediaries. Continued linkage of their liabilities to the consumers' price index while their assets gradually lose the protection of value-linking means that the institutions will inevitably be dependent on the Government. It may be that this does not constitute any essential change in comparison with the period immediately prior to the "linkage crisis," but it does preclude any opportunity of changing a situation in which the financial institutions act as quasi-governmental credit agencies and not as savings organizations.

The considerable expansion in the bill brokerage market and in the issues of the Government Short-Term Loan indicate the existence of a sizable pool of capital looking for investment opportunities. The financial

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77) For concessions to borrowers for housing purposes, see Bank of Israel, Annual Report 1962, pp. 261-

78) The main recommendation of this committee was to link mortgages, not to the consumers' price index, but to the index used for calculating the cost-of-living allowance. For the importance of this recommendation and its subsequent complications, see Bank of Israel, Annual Report 1965, pp.378-7 and Annual Report 1966, pp.429-30. It should be noted that recently - and particularly since the beginning of the slump in construction - many mortgages have been given without linkage.

institutions could exploit such opportunities in order to expand their activities as independent financial intermediaries, were it not that they are subject to a handicap which no private institution could overcome — the raising of funds subject to value-linking conditions and their allocation to borrowers without linkage. Such a situation can be maintained only if the discrepancy liable to arise is covered from governmental sources.

Not only does the disruption of symmetry in the value-linking system perpetuate the status of the financial institutions as bodies allocating under Government direction sums provided or guaranteed by the Government, but this situation also completely undermines the role of the rate of interest as an instrument for allocating capital and encouraging saving. The rate of interest has been made a subject of administrative decision and can no longer carry out the functions it performs in a market economy.

Since it is difficult to envisage the restoration of all value-linking arrangements (and it is doubtful whether this is desirable), the logical conclusion is that action should be taken to abolish the linkage of the liabilities of the financial institutions. The encouragement of saving and the prevention of hardship to existing savers will necessitate efforts to achieve price stability and special treatment of the problems facing the provident and insurance sector.

3. SOCIAL INSURANCE FUNDS AND INSURANCE COMPANIES

Two types of institutions, differing from one another in some important respects, are included in this group.

Social insurance funds, including provident funds, insurance funds and pension funds, are institutions set up as the result of negotiations between employers and employees' organizations, and in all of them the employers participate in the accumulation of savings funds which are placed at the disposal of the employee at the end of his employment.

Insurance companies (particularly life insurance companies) are similar to social insurance funds in their function as savings repositories, but they operate on a commercial basis irrespective of considerations of labor relations or social security.

In the Israeli economy the importance of the social insurance funds is far greater than that of the insurance companies, and we will therefore begin by examining some characteristics of this group.

1. The Various Types of Social Insurance Funds[79]

The basic distinction between the various types of social insurance funds is related to their primary function as either savings institutions or insurance organizations. The former accumulate the sums contributed by employees and employers (in different proportions), invest them, and place at the disposal of the member when he leaves the fund, the sums which have accrued to his credit. Insurance organizations — especially the pension funds — also receive contributions from employees and employers

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79) For a comprehensive survey on this subject, see Sarnat, op. cit.

and invest them, but their liability to the member does not correspond directly to the sums which have accrued to his account. The money received by the worker when he stops working (or by his family if he dies) may be greater or smaller than the amount accumulated in his name — according to the length of his membership and the number of years he benefits from the pension. Pension funds, like life insurance companies, must take into account actuarial considerations which the savings institutions can ignore — the level of contributions and the rate of return on investments must be adequate to cover the obligations undertaken.

The following are primarily savings institutions:

a) Provident funds — the pioneers of the social insurance funds in this country. As stated, they accumulate money contributed by employees and employers, and their liability is limited to the sums accumulated in the account of a member (including profits from investments).

b) Severance pay funds — these funds are in many cases connected with the provident funds, but the money accumulated in them comes from the employer only. It has been customary in Israel for many years — and confirmed by law in 1963 — to pay severance pay to a dismissed employee in proportion to the number of years he has worked and the level of his wages.[80] In order to meet this payment at the relevant time, many employers (under pressure from employee organizations) have chosen to accumulate funds on a regular basis for severance pay purposes.[81]

As stated, pension funds are basically insurance organizations. Securing the right to a pension is a social achievement of primary importance, and the number of those insured is constantly increasing. Somewhere between the pension funds and the provident funds stand the central insurance funds, established by the Histadrut to ensure for workers in construction, agriculture and small industrial and commercial enterprises the same social benefits as those enjoyed by permanent workers in large enterprises. In addition to provident benefits, these funds have set up reserves of a more insurance-like nature aimed at covering other social payments (sick benefits, rehabilitation, recuperation, etc.).

Since the establishment of the State the number of members in social insurance funds has grown at a rapid rate: from 176,000 in 1952 to 266,000 in 1957, 385,000 in 1961, and 520,000 in 1966. On the other hand, there was a downward trend in the number of funds, since the Histadrut worked towards forming central funds for workers in its own enterprises — mainly in connection with the transition from provident to pension arrangements and with a view to making the investment activities of the funds more efficient. To this end the Gmul investment company was also set up.

It has been mentioned that the central problem facing long-term savings institutions in Israel was the preservation of the real value of savings under inflationary conditions. Value-linking was the proper solution, as far as the funds were concerned, and about 80% of the monies accumulated are currently invested in value-linked assets. The undermining of the linkage principle, mentioned above, necessitates, however, some fresh thinking about the investment arrangements of the social insurance funds, as they are the main purchasers of linked debentures.

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80) The Severance Pay Law 1963. The customary contribution was 1/12 of the worker's salary; the severance money paid was one month's salary for each year of work.

81) Following the enactment of the law, central funds were set up - mainly by the banks - for severance pay purposes; these were not related to the provident funds.

Social insurance funds face another difficult problem with respect to the volume and extent of their liabilities. Even the provident funds, which guarantee their members no more than value-linking of savings, must find linked investments; this applies all the more to the pension funds, which undertake to pay their members a pension at a certain percentage of their last salary (according to number of years of work, but not more than 70%), the size of the pension varying with cost-of-living allowances. It is clear that current contributions to the pension fund cannot correspond in any way with the last salary, which is not yet known — and this may undermine the actuarial soundness of the fund, and requires either an increase in pension contributions or the closing of the gap by some other means.

The social insurance funds are subject to governmental supervision, which does not focus on the problems of value-linking and actuarial soundness just mentioned. The Government supervises the financial administration of the funds and the direction of their investments. This control is grounded on the fact that money contributed to the funds enjoys various income-tax concessions, but it was first instituted only in 1957. The control regulations lay down that the social insurance funds have to invest 80% of their funds in "approved" investments (this was 65% to begin with but has been raised gradually). "Approved" investments are of two categories:

a) Half of them go to Histadrut enterprises, on the basis of an agreement between the Government and the Histadrut. Since the Histadrut initiated most of the social insurance funds, almost all accumulated funds went to its enterprises up to the implementation of Government control. The present arrangement is a compromise between the former situation and the Government's intent to control the most important source of private saving in Israel.

b) The remaining half are invested in "approved securities," which are Government securities or securities of other bodies (mainly financial institutions) which undertake to use the money received according to Government instructions.

At first, the social insurance funds were obliged to acquire approved securities at source. Only afterwards was recognition given to the importance of the stabilizing role the funds can perform in the securities market, and in 1961 they were permitted to acquire approved securities on the market in substitution for securities they sold. The limitations on the type of securities they were allowed to purchase did not enable the social insurance funds to invest in ordinary shares until November 1964. The permission then granted to place on the share market up to 5% of accumulated funds, was little utilized, because of the uncertainty created by a downturn in prices which overtook the market in early 1964, and the funds had not yet become of importance in the share market. Their role in the capital market as a whole is therefore quite limited; they are, in fact, savings institutions whose task is to collect saving funds and distribute them to members on retirement — their role in the allocation of the accumulated funds is subject to comprehensive restrictions.

2. Assets and Liabilities of the Social Insurance Funds

The receipts of the social insurance funds come from three main sources (see Table 16). The first is employers' contributions, mostly to the accounts of the employees but a small part to central severance pay funds; employers' contributions form two-thirds of all contributions. The second source, employees' contributions, forms the remaining third. Employers' and employees' contributions together have in recent years amounted to about 8% of the total wage bill. The increase in this percentage in comparison with the early fifties represents wider participation in the funds on the one hand, and the transition to pension arrangements on the other. The third source of receipts is income from investments — with increased accumulation of funds, the importance of this source is constantly growing. As from the end of the fifties the share of the capital gains component in income increased as a result of the operation of value-linking clauses.

Most of the payments made by the funds are to retiring members. Until a few years ago the social insurance funds paid out only a sixth to a fifth of their receipts, the reasons being that they had expanded rapidly, the labor force in Israel is relatively young, and the number of pensioners is

TABLE 16. Accumulation of Funds in the Social Insurance Funds: Selected Years — 1952— 1966 (IL millions)

	1952	1957	1962	1966
Employer and employee conbributions	22.0	66.8	177.2	371.2
Income from investments and operations	2.8	14.6	47.2	120.1
Capital gains		0.5	19.5	28.4
Total receipts	24.8	81.9	243.9	519.7
Payments to members	4.1	17.8	53.0	170.1
Operational and other expenses	3.4	10.8	11.0	29.6
Total payments	7.5	28.6	64.0	199.7
Annual accumulation	17.3	53.3	179.9	320.0
Payments to members ÷ total receipts (per cent)	16.5	21.7	21.7	32.7
Income from investments and capital gains ÷ total receipts (percent)	11.3	18.4	27.3	28.6
Wage payments in the economy	—	1,323	2,117	4,374
Contributions to funds ÷ wage payments (per cent)	—	5.0	8.4	8.5
Gross national saving	—	187	733	1,278
Annual accumulation ÷ gross national saving (per cent)	—	28.5	24.5	25.0

— No data available

Source: 1952 and 1957 — Samat, op. cit.
1962 and 1966 — Annual Reports of the Bank of Israel.

as yet small. In recent years, however, there has been a marked rise in the ratio between payments to members and total receipts, which is now approximately one-third.[82]

The accumulation, which represents savings through social insurance funds, is considerable — about a quarter of gross national saving. Most of this sum is accumulated in three funds (see Table 17): the pension fund (whose weight is on the increase owing to the transition to pension arrangements); the provident fund, whose share is decreasing for the same reason; and the severance pay fund, whose importance has also grown as a result of legislation on the subject and the establishment of central severance pay funds, which may also be utilized by employers not previously connected with provident funds.

The assets revaluation fund should in fact be distributed among the three funds mentioned above. The differentials due to the linkage of assets will undoubtedly be required to enable the social insurance funds to meet their linked liabilities to their members. Other social security funds are mostly administered by the central insurance funds, mentioned above, and the need for them arises from the fact that the insurance funds have absorbed many temporary workers who were more vulnerable than permanent workers as regards sickness benefits, recuperation and rehabilitation.

More changes have taken place in the structure of the funds' assets than in the structure of their liabilities. The changes were a combined result of the transition to value-linking (beginning in 1953—54) and of Government control, which began in 1957. From 1948 to the early fifties investments of the social insurance funds in securities did not rise much above 10% of total assets; as may be seen from Table 17; in 1952 they had a relatively high proportion of liquid assets and their investments in real estate were considerable.

The Government control directives, which, as mentioned, required most of the Funds' assets to be invested in "approved investments", also imposed restrictions on the proportion that could be allocated for loans to members (when Government control began, these amounted to about 20% of total assets) and called for a certain minimum rate of interest to be collected on such loans. Employers were, moreover, obliged to pay interest on their arrears, so that it was not worth their while to utilize what was before the controls a cheap and convenient form of credit. The results of all these regulations left their mark on the composition of assets: in 1957 the debts of members and employers amounted to over one-third of total assets; in 1966 this had dropped to less than a sixth. Another result — indirect at any rate — of the control regulations was the decline in the share of liquid assets and real estate.[83]

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[82] This increase is natural in view of the greater number of persons benefiting from retirement funds, but it calls for reexamination of the actuarial basis of present arrangements in the funds - in particular, the payment of pensions based on the worker's last salary. To illustrate the dimensions of the problem, let it be recalled that the average salary of the Israeli employee rose from IL280 a month in 1961 to IL570 a month in 1966.

[83] Since the assets of the social insurance funds are usually quoted at cost in the balance sheet, it may be assumed that the value of real estate owned by the funds was considerably higher than that appearing in the balance sheet.

TABLE 17. Distribution of Assets and Liabilities of the Social Insurance Funds at Enc of Selected Years: 1952—1966 (percentages)

	1952	1957	1962	1966
Total assets = total liabilities (IL million)	50	243	849	2,116
Distribution of assets	100.0	100.0	100.0	100.0
Cash [illegible] demand deposits	6.6	1.9	0.9	0.7
Deposits earmarked for loans*	29.0	29.2	11.6	1.5
Securities (at cost)	11.5	18.9	54.4	68.2
Differentials due to revaluation of assets**	–	–	4.5	9.5
Loans to members	15.0	20.0	14.7	10.1
Employers' debts	18.4	15.6	8.5	4.5
Real estate	8.0	4.2	3.2	2.6
Other assets†	11.5	10.2	2.2	3.0
Distribution of liabilities	100.0	100.0	100.0	100.0
Pension fund	76.8	39.0	43.9	45.1
Provident fund		38.0	28.5	20.6
Severance pay fund		7.6	11.1	11.8
Various social security funds ††	9.2	6.5	5.5	6.9
Revaluation of assets fund	–	–	4.5	9.0
Profit and loss balance and reserves	7.6	2.9	3.5	4.0
Sundry creditors	6.4	6.0	3.0	2.1

* Including deposits and loans of Gmul, special deposits in banks, and a small amount of fixed-term deposits.

** Differentials due to the operation of value-clauses, mainly with regard to securities.

† Including loans given directly and not included under other headings.

†† Funds for recuperation, rehabilitation, mutual help, etc.

Source: 1952 and 1957 — Sarnat, op. cit. (distribution of capital in 1957 — estimate based on 1958).

The decline in the above-mentioned asset categories was accompanied by a corresponding rise in the share of approved (and linked) investments. Although in 1957 (at the beginning of Government control) the funds were already aware of the importance of placing as large a part as possible of accumulated funds in linked investments, such investments did not then amount to even half of the total assets. The control regulations resulted in almost four-fifths of assets being linked at the end of 1966 — nearly all of them Government or other approved securities.[84]

We shall not go into an analysis of the distribution of linked investments of the social insurance funds, since it does not reflect any independent business policy. Up to 1957 the relationship of most of the institutions to the Histadrut had a decisive influence on the composition of investments, while afterwards the directives of the Government assumed a growing role. We will return to and summarize the significance of Government control in referring to the structure of the capital market in Israel at the end of this chapter.

3. The Insurance Companies

Most Israeli insurance companies deal with both general and life insurance. Unlike their counterparts in developed Western countries, they do not constitute an important factor in private saving. This situation is a consequence of the importance of the social insurance funds (whose membership in 1966 was more than 500,000 — some five-sixths of all wage-earners) and of the inflationary pressures which have beset the economy for many years. The insurance companies lagged behind the provident funds in adopting a policy of value-linking and are still far from bridging the gap which was created in the fifties.

Insurance is one of the few branches of the Israeli economy in which foreign firms are active. Of 81 firms operating in 1966, 53 were agencies of foreign companies. However, most of these are engaged in general insurance, and their share of the combined balance sheet of the branch was not more than 10% during the sixties.

From the point of view of financial intermediation, life insurance is more important, and here the Israeli insurance companies dominate the field. Out of 28 Israeli insurance companies, eight hold almost 80% of total assets. Even these "large" companies are, however, fairly small, as is clear from the fact that the assets of Israeli insurance companies at the end of 1966 totalled less than IL400 million.[85] There are, in Israel, five banking and financial institutions each of which is at least twice as large as all the insurance companies together in terms of total assets.[86]

The life insurance companies were saved from complete stagnation by the implementation in the late fifties of programs for value-linked life insurance. According to the insurance contracts, the value of the saving

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84) The distinction between deposits earmarked for loans and investment in securities is somewhat blurred. Until the beginning of the sixties there were two types of deposits among the important asset items;

(a) Deposits in Gmul, the central investment company of the provident institutions, which places most of its investments in Histadrut enterprises;

(b) Deposits with banking institutions, especially with Bank Hapoalim, which were also used for loans, mainly to Histadrut enterprises.

For various reasons it was decided to abolish the deposit arrangements, but not the flow of funds to Gmul and Bank Hapoalim. The social insurance funds now purchase securities issued by Gmul and Bitzur, a subsidiary of Bank Hapoalim which deposits all the capital it raises in the bank.

85) In recent years the life insurance companies have grown more rapidly than the social insurance funds, though in 1965 and 1966 their growth in absolute terms was still little more than 10% that of the funds.

86) In the United States, for example, the assets of the two largest insurance companies are greater than those of the largest bank.

element is linked to the consumers' price index (and until the devaluation of 1962 there was also linkage to the exchange rate). The companies' ability to meet their linked liabilities is based on an agreement between them and the Government-owned Israel Electric Corporation according to which the insurance companies buy the Corporation's linked debentures whose repayment dates are adapted to the terms of the insurance contracts.[87]

TABLE 18. Distribution of Assets and Liabilities of Israeli Insurance Companies in Selected Years: 1952–1966 (Percentages)

	1952	1957	1962	1966
Total assets = total liabilities (IL millions)	15.3	45.2	156.7	391.1
Distribution of assets	100.0	100.0	100.0	100.0
Approved debentures*	6.4	10.3	21.3	37.6
Other securities	8.7	6.1	5.8	2.6
Loans**	35.3	32.1	30.3	14.0
Fixed investments (including real estate)	6.0	5.8	7.9	8.8
Sundry debtors †	31.0	30.5	24.3	28.3
Cash and demand deposits	12.6	15.2	10.4	8.7
Distribution of liabilities	100.0	100.0	100.0	100.0
Life insurance fund	33.2	39.4	35.6	38.1
Other insurance funds	14.5	12.8	11.3	9.4
Equity capital	13.2	12.4	19.9	17.8
Claims pending	7.1	10.8	9.8	11.5
Other liabilities ††	32.0	24.7	23.4	23.2

* Government or Government-guaranteed debentures, including debentures of the Electric Corporation.
** Including mortgages, ordinary loans, long-term deposits and loans on policies.
† Mainly premiums for collection.
†† Including reinsurance deposits.

Sources: 1952 and 1957 — C. B. S., Insurance Business in Israel, Jerusalem, 1954, 1959.
1962 and 1966 — Annual Reports of the Bank of Israel.

The life insurance fund which represents the savings element in the balance sheets of the insurance companies forms a relatively small part of total liabilities — in comparison with the share of pension and provident funds in the liabilities of the social insurance funds (see Tables 14 and 15). No clear trend in the share of life insurance funds is discernible throughout the period surveyed. On the other hand, there was a considerable decline in the share of other

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87) According to the Electric Corporation's balance sheet of 31.3.67, it had received from the insurance companies IL 11.4 million on dollar-linked terms and IL 49.4 million in index-linked terms. Up to the above date, the linkage differentials amounted to about IL 26.2 million. On the basis of the data in the Corporation's report, the cost of capital raised through linked debentures is 11-17%, depending upon the year of sale and the dates of repayment.

insurance funds (connected with the general insurance branch), while equity capital was greater to a marked degree in the sixties than in the fifties.

The relatively large equity capital[88] can be accounted for by the multiplicity of small insurance companies whose insurance business is in its early stages of development, and by the relatively large fixed investments and the business affiliations of the insurance companies in other branches of the economy. (Real estate and investments in affiliated companies constituted about 9% of assets of the insurance companies at the end of 1966.)

Among the assets, the outstanding feature is the rise in the share of approved debentures, owing to the development of linked life insurance mentioned above, while the share of other securities decreased.

The total of loans has declined sharply in recent years. Companies used to invest an important part of their life insurance funds in mortgages and other business loans, but the linked life insurance system meant that additional funds had to be invested in the Electric Corporation securities instead of loans. One type of loan, which appears to be difficult to eliminate, is loans to policy-holders.

A recurrent characteristic of both the assets and the liabilities of insurance companies in Israel is the relative magnitude of current items. Premiums for collection, which constitute the main item in current assets, are a sort of credit to agents and clients, and the size of the item would appear to reflect keen competition between the companies (there is almost no competition as regards insurance premiums), while it is also possible that the insurance companies operate in the short-term money market — as lenders or even as brokers. (There are ownership connections between several companies and some of the commercial banks.)

4. Private and Social Insurance

Although insurance companies and social insurance funds are subject to governmental control, insurance through these institutions is not completely socialized. Saving through insurance companies is, of course, voluntary, and the amounts which the companies undertake to pay the insured person are correlated to the level of premium collected from him. (These two aspects are also valid in theory with regard to the social insurance funds, though in fact membership in the funds is not entirely voluntary, and the actuarial difficulties mentioned above are liable to undermine their ability to meet their pension commitments in the long run.)

A system of social insurance proper has been in force in Israel since 1954. The National Insurance Law of 1954, on which the National Insurance Institute is based, comprehends a number of branches of insurance, but we are mainly interested here in old-age and survivors' insurance, which account for most of the Institute's accumulated funds.[89]

88) The equity capital of insurance companies in the United States is considerably less than 10% of total liabilities.

89) The Law also allows benefits for the following employment: injuries (disablement allowance, accident benefits, rehabilitation benefits), maternity (maternity allowance), large families (family allowances), and children of working parents. The insurance fund in the old-age and survivors' branch takes up over 80% of total insurance funds.

The National Insurance Law obligated each employee or self-employed person to pay a premium which amounts to a certain proportion of his taxable income. In return for this payment he is entitled on retirement to a fixed pension which bears no relation to his past income (and therefore to the premiums he has paid). Old-age pensions are low but are guaranteed to everyone on his retirement without reference to the length of time he has been insured.[90] National insurance has therefore characteristic attributes of comprehensive social insurance: the whole population is covered, premiums are proportionate to income and the level of pension is fixed by law, without reference to amount of contribution or length of insurance.

TABLE 19. Financial Developments in National Insurance in Selected Years: 1954/55 to 1965/66 (IL millions)

	1954/55	1958/59	1961/62	1963/64	1965/66
Total insurance premiums collected	23.9	61.7	122.1	166.6	260.3
Total allowances paid out	5.6	2.0	79.5	114.7	195.5
Number of insured persons (thousands)	535	640	720	830	865
Insurance premiums as percentage of national income	1.60	2.26	3.03	2.63	3.16
Old-Age and Survivors' Insurance					
Insurance premiums and interest	13.8	39.6	92.7	131.8	185.7
Treasury allocation	—	3.0	8.4	10.2	14.1
Linkage supplement	—	3.3	13.9	12.3	32.4
Total receipts	13.8	45.9	115.0	154.3	232.2
Total payments	0.3	27.1	47.0	64.8	82.3
Assets of the branch	—	134	273	448	687
Liabilities of the branch	—	272	440	585	820
Actuarial deficit	—	148	167	137	133
Assets ÷ liabilities (percent)	—	46	62	77	84

— No data available

Sources: Annual Reports of the National Insurance Institute and of the State Comptroller.

There is some connection between the operations of the social insurance funds and those of National Insurance. The funds transfer to the National Insurance Institute the contributions laid down by law and they deduct from the pension they pay their retiring members the sum paid by the Institute. The provident funds therefore constitute a complement to national insurance.

The scope of the activities of the National Insurance Institute in financial terms has been considerable of recent years (see Table 19). It will be

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90) The average allowance paid in 1965/66 was about IL70 a month, to which was added a "social benefit" of about another 40%, covered by the Treasury. In October 1966 the old-age pension and survivors' allowance were increased by 10%.

seen that, although old-age pensions and survivors' allowances are relatively low, there is a far from negligible actuarial deficit in the branch (the percentage of which has dropped in the last few years). Though the law does not insist on it, the accumulated funds of the National Institute are invested to the full in the State Treasury.[91] The influence of the Institute on the capital market is indirect only — the Government borrows from the Institute sums that it would have to borrow elsewhere if it did not receive them from this source.

4. THE SECURITIES MARKET[92]

The securities market differs from the financial markets hitherto described, where the financial intermediaries serve as a channel for the transfer of money from lenders to borrowers. Financial intermediation is broken into two stages — the financial intermediary first borrows from a certain group of economic units and then lends to another, without the first group having any voice in how the intermediary uses its money.[93] For the sake of clarity, we may distinguish between two sections of the securities market — the new issues market and the stock exchange, where the existing stock of securities is traded.

In the new issues market, funds are transferred directly from lenders to borrowers — with financial institutions facilitating the process by underwriting issues, distributing the securities and providing advice, but it is the lender who chooses the borrower and obtains a direct obligation from him. A securities market, where public bodies and commercial firms can raise capital, cannot emerge unless there are in the economy borrowers whose businesses are sound enough to persuade private lenders to deposit money with them — whether in the form of a loan or as participation in the business (acquisition of shares).

Moreover, the development of a new issues market depends on the existence of a large number of lenders with business acumen and the willingness to take risks in acquiring securities from borrowers, other than financial institutions of good repute and long standing, as well as on the development of a secondary market where outstanding securities may be traded. In other words, the sale of new securities depends on the existence of assured facilities for trading in them in the long run.

Such conditions are met only when the economy has passed its primary stages of development. Government securities usually serve as a factor advancing the development of the market — since the Government is nearly always a safe borrower. Prior to the establishment of the State this element was scarcely of any importance, as the Mandatory Government issued no securities in this country until World War II.[94] The emergence

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91) The law calls for a "constructive investment." Investments in the Treasury are linked to the consumer price index and bear interest of 5.5% a year (as from 1963).

92) The main sources for this section are; M. Sarnat, The Development of the Securities Market in Israel, 1966, and Annual Reports of the Bank of Israel.

93) The bill brokerage market (see section on the banking system) does not technically fit this definition, but in effect there is no essential difference between most of the brokerage transactions and deposit-and-loan transactions.

94) A Palestine Government Loan was issued in London in 1927 and was traded on the London Stock Exchange (the amount borrowed was LP4.5 million, at 5% interest, government-guaranteed).

of the local securities market in the thirties followed the immigration of the German Jews. A number of securities were issued — mostly debentures of the General Mortgage Bank — and traded in a stock exchange which commenced operating at the end of 1935. It should be noted that some fairly large firms raised capital on the English securities market, since the local market was too small for the absorption of large issues.[95]

In 1944–45 there was a considerable expansion of the local securities market as a result of the war-induced economic boom. On the eve of the establishment of the State, 56 securities of 23 firms and institutions were listed on the Tel Aviv Stock Exchange at a quoted total value of over LP17 million (of which over 60% were in bonds).[96]

With the establishment of the State, capital was needed on a large scale as a result of the war and mass immigration, but only a fraction was obtained from the sale of Government securities to the public. From 1949 to 1951 bonds to the value of approximately IL43 million were sold — of which IL14.5 million were a special loan issued to the banking and financial institutions[97] and IL8 million were dollar-linked loans issued in exchange for foreign securities held by the public. Most of the Government's financial needs were met by deficit financing and foreign aid, and the inflationary pressures which beset the economy further undermined the public's willingness to purchase fixed-income securities: in 1952 and 1953 only IL10 million of Government bonds were sold.[98]

This stagnation in the supply of Government bonds was accompanied by securities offerings to the public of a not insignificant number of firms. Between 1950 and 1954 there were 21 issues of securities totalling about IL7.3 million; of these, 11 were issues of ordinary shares (42% of the quoted value of issues), six were of convertible bonds (30%) and four of preference shares. The tendency to acquire shares and convertible bonds was based on the hope that an investment of this sort can serve as a hedge against inflation.

Over a number of years the index of ordinary share prices rose as follows: 1951 — 130; 1952 — 136; 1953 — 155; 1954 — 227 (1950 = 100). In 1954, however, a five-year decline set in. The reasons for this downturn were: (a) a low level of profitability of issuing companies, which could not increase dividends in keeping with changes in the price level, so that the return on shares was low in comparison with interest rates on the free credit market; and (b) investors in debentures were treated more favorably by the income tax law than investors in shares; a preference which assumed increasing significance with the introduction of value linking.

Moreover, it seems that the interest of companies in the possiblity of raising capital in the market declined when they were enabled to borrow on easy terms from the Government's Development Budget. The finishing stroke, which brought the share market to a standstill until 1959, was the introduction (in 1955) of value-linking clauses into most debenture issues.

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95) Issues were floated in England by the Electric Corporation, the Potash Co., Nesher Cement, the Anglo-Palestine Bank (today's Bank Leumi), etc. The value of Palestinian securities on the London market totalled almost £8 million at the end of the thirties.

96) See Poehter, Banking — Theory and Practice, 1960, pp. 160-2.

97) In addition, the Government sold to the banking institutions a considerable amount of Treasury bills (see above) and Land Bills.

98) This was the total of sales to the public. During the same period the Government issued about IL20 million of compulsory loan certificates.

Table 20 presents a summary of security issues in Israel from 1950 to 1966 and illustrates the effect on the structure of the securities market of the decline in share issues and the introduction of linked debentures.

TABLE 20. Net New Issues of Securities: 1950–1966 (IL millions)

	Total	Shares	Debentures	Debentures as % of total
1950–1954	51	8	43	84
1955–1959	242	3	239	99
1960–1964	1,248	395	853	68.3
1965–1966	576	13	563	97.7

Sources: Sarnat, op. cit., and Annual Reports of the Bank of Israel.

Between 1955 and 1959 there were practically no new share issues; during that time the securities market became dominated by public loans — those issued by the Government or with its guarantee. The bulk of the debentures were sold subject to value clauses linking the principal either to the consumers' price index or to the exchange rate.[99] At the end of 1958, securities neither issued nor guaranteed by the Government were only about 15% of the quoted value of securities on the stock exchange — and they were about evenly split between shares and debentures.

In 1959 the share market reached a turning point — the index of ordinary share prices rose during the year by more than 80% and three new issues were successfully floated. One reason for this development was a change in the attitude of the Government. First of all, income tax concessions were granted to investors in shares, as well as to foreign investors; secondly, since the middle of the fifties the terms of Government development loans had been made gradually less concessionary, and firms were encouraged to look for capital in the share market; thirdly, an improvement took place in the operating results of a considerable number of the companies listed on the stock exchange, and as a result these embarked upon a more liberal dividend policy.

The numbers and amounts of new share issues since 1959 are given in Table 21. The growth in the total amount of issues between 1960 and 1964, particularly in the peak years 1963–64, was impressive, but it should be remembered that even in these years only a small part of business sector investments (between 10 and 20%) were financed from this source.[100]

[99] Investors were usually given the opportunity of choosing between index-linked and dollar-linked loans. The data show that preference varied from year to year – the percentages of dollar-linked loans were as follows: 1956 – 33; 1957 – 49; 1958 – 41; 1959 – 86. In 1959 there were widespread rumors of impending devaluation.

[100] According to an indirect estimate, business investments amounted to more than IL800 million in 1963 and more than IL1,000 million in 1964. (See Meir Heth, Flow of Funds in the Israeli Economy, 1959 to 1966, Bank of Israel, Jerusalem, 1968 – in particular Chapter 8.)

TABLE 21. Issues of Ordinary Shares and Stock Exchange Trading: 1959–1966

	1959	1960	1961	1962	1963	1964	1965	1966
Number of issues	3	14	20	12	43	26	6	1
Amount of issues (IL millions)	2.0	20.5	47.2	34.2	174.9	107.8	9.2	4.2
Index of share prices*	67.7	128.9	112.3	145.3	198.7	171.3	139.7	107.0
Volume of annual transactions (IL millions)	–	38.2	46.5	68.4	236.1	222.2	91.3	89.3

* Prices at end of year – average for 1960 = 100.

Sources: Up to 1961 – Sarnat, op. cit., 1962 on – Annual Reports of the Bank of Israel.

The hope that the turning-point in the share market, and especially the rate of progress in 1963 and 1964, would lead to a radical change in the pattern of business financing in Israel and in the importance of the capital market was not realized. In the second half of 1964 there were marked declines in the various indices of share market activity: new issues dropped from IL68 million in the first half of the year to IL40 million in the second half; the volume of transactions on the stock exchange fell from IL155.5 million to IL65.9 million during the same period; and the index of share prices decreased by about 15% during the year. It is difficult to find a clear and obvious reason for the change. It was apparently due to a combination of factors, the importance of each of which is subject to dispute:

a) It was to be expected that the boom would come to an end, and anticipation of a change was apparently one of the factors that brought it about.

b) A capital gains tax on share transactions was imposed in June 1964. The tax and the rumors which were rife on the subject since 1963 restrained demand and led to increased sales with a view to realizing profits before collection of the tax began.

c) The multiplication of new issues, mainly between September 1963 and March 1964, increased the pressure of supply on the market.

d) The slow-down in monetary expansion and the restraints imposed on the boom in the real estate market apparently reduced the supply of funds flowing to the share market, adversely affected the profitability of real estate firms listed on the stock exchange, and also dampened the mood of prosperity to some extent.

It is clear in any case, that the causes of the depression in the share market reinforced one another — the large number of new issues led to a drop in prices and this undermined interest in the share market, including that of foreign investors. The implementation of the capital gains tax also worked in the same direction and the decline in share prices created market conditions which were not auspicious to new issues. The attempts made afterwards to breathe new life into the share market were not successful — the establishment of equalization funds to moderate price fluctuations, the encouragement given the social insurance funds to participate more actively in the share market, and even the abolition of the capital gains tax after a year — all these measures failed to curb the retreat.[101]

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[101] See Annual Reports of the Bank of Israel, 1964 – pp. 439–40, and 1965 – pp. 439–41.

The reasons for this unhappy state of affairs should, perhaps, be sought among other economic and institutional factors:

e) Capital import from abroad, a considerable part of which was channelled to the public sector, reduced the importance of the local capital market for financing investments. Loans from the Development Budget of the Government, served as a substitute for the raising of capital on the market.

f) The number of firms which sold their shares to the public is, accordingly, relatively small. Only 25 industrial and commercial firms listed their shares on the Tel Aviv Stock Exchange, whereas the census of industrial companies with more than 50 employees in 1963 listed 300 firms.[102]

g) Some interesting facts emerge from the distribution according to branch of firms whose shares were listed on the stock exchange. Between 1961 and 1965 the shares of only eight commercial and industrial companies were so listed, while 14 shares of banks, insurance companies and financial institutions, and 11 of investment companies were listed. This large number of financial shares listed was due to the riding of the boom in the market by firms close to its activity; no corresponding change took place in the willingness of commercial and industrial firms to raise money in the share market.[103] The development of investment companies can be a stimulant to the share market if they assume risks that the public at large cannot be expected to undertake, and make their profits by bringing the firms in which they invest to a stage at which their shares will be sellable on the market. Most of the investment companies established in the boom years had no intention of proceeding in this manner — they generally served their organizers (commercial banks or other business concerns) as instruments for raising capital and realizing capital gains on the securities they held without losing control of them.

TABLE 22. Number of Companies with Ordinary Shares Listed on the Stock Exchange, by Branch; 1961, 1963 and 1965

	1961	1963	1965
1) Public Services	1	1	1
2) Banks, financial institutions and insurance companies	9	17	23
3) Land and development	4	8	12
4) Industry and commerce	17	24	25
5) Fuel and oil	3	3	3
6) Investment companies	4	13	15
Total	38	66	79

Source: Annual Reports of the Bank of Israel.

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[102] See "Financial Changes in Industrial Companies in Israel in 1963", Bank of Israel Bulletin 24. These 300 firms in 1963 produced about 70% of total output of industrial companies.

[103] The distribution of the total amounts of ordinary share issues shows that in 1960-62 the issues of commercial and industrial firms still took up 31% of the total (financial shares constituted 69%); in 1963-64 their share dropped to 7%, while that of financial shares rose to 73% (see Karmat, op. cit., p. 50).

h) The Israeli Companies Law permits even companies selling their shares to the public to differentiate between types of shares — that is, to surrender to investors only a small part of the voting stock, and retain control. This control by founders and company managers is not likely to strengthen the confidence of investors.

i) Although the law enables the owners of private firms to raise capital without losing control, they do not show much interest in share issues. One reason is that the issue of shares and their listing on the stock exchange requires changes in business procedures and disclosure, though to a much smaller extent than is required, for example, in the United States. There is no doubt that this hesitation would not have been decisive, but for another important factor — that firms can raise loan capital, mainly from institutions owned by the Government or acting under Government instructions.[104] Share capital is a relatively expensive form of finance — and as long as company owners can raise loan capital on reasonable terms, they will prefer to retain control and increase the financial leverage.

j) Institutional investors are of relatively little importance in stimulating demand in the securities market. We have pointed out above the restrictions on the freedom of action of social insurance funds and the limited size of insurance companies. The investment companies were unable to fill the gap, though their importance increased from 1962 onwards. (One of the reasons for the limited role of investment companies is made clear by the background of the establishment of companies referred to in paragraph (g) above.)

k) Two important sectors in the Israeli economy — the enterprises of Hevrat Ovdim (the economic branch of the Histadrut) and the companies of the public sector — have good alternatives to the capital market. The former obtain their needs from sources controlled by the Histadrut — mainly social insurance funds. The latter benefit from the funds of the Government's Development Budget, which is inevitable in the case of some of them that are not profit-seeking enterprises.[105] All this means a considerable limitation of the potential development of the capital market, since these two sectors include a fair number of large firms whose shares could be issued to the public. (In addition, there is of course factor (e) above — capital import, which was the main source of finance.)

If the seven last factors are indeed responsible for the scant importance of the share market in Israel — and it seems to us that they are — then the years 1961–1964 should be regarded as an exceptional period, when there were special factors at work to revive the market — but the short-lived revival did not bring about the transformation of the market into an important source of investment capital for firms in various branches of the economy. This is regrettable, since it may be assumed that the import of capital — which in the past has reduced the need for developing the local securities market — cannot continue for long at its present level.

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[104] This is true despite what has been said above about the more stringent loan terms introduced at the end of the fifties.

[105] Gross credit receipts of the public sector companies between 1959 and 1965, totalling about IL2,100 million, came from the following sources: the public sector — 59%; financial and provident institutions — 17%; rest of the world — 15%; other sources — 9% (see Heth, op. cit.).

Even in the years when the share market was prosperous, the amounts raised through debenture issues was greater than that raised by share issues (see Table 20 above). A marked change took place, however, in the composition of debenture issuers. Since 1959 the rate of issue of Government loans has slowed down and the rate of other loan issues speeded up (between 1962 and 1964 the net issue of Government loans — excluding the compulsory Absorption Loan — consisted mainly of the Short-Term Loan). This change was not a fundamental one, as we have already seen in the survey of the activities of the financial institutions. Instead of issuing its own loans and depositing the proceeds in financial institutions, for the purpose of granting credit, the Government decided to leave to the financial institutions the task of issuing debentures — on condition that the receipts would be used according to its instructions. The loan market therefore remained under Government control, even though the total amount of non-Government loans listed on the stock exchange is apparently greater than that of Government loans.[106]

In recent years the balance of securities traded in foreign currency has increased rapidly. A number of Israeli institutions and companies were

TABLE 23. Domestic Security Issues and Distribution of Securities Listed on the Stock Exchange, by Type: 1957-1966 (IL millions)

Year	No. of issues	Securities Listed on Stock Exchange*					Market value of securities listed on exchange	Balance of short-term loan
		total	Govt. loans	other loans	shares	securities traded in foreign currency		
1957	49	219	155	45	19	–	–	–
1958	44	255	183	53	19	–	–	–
1959	99	362	215	126	21	–	371	–
1960	61	444	217	165	62	–	493	20
1961	178	673	244	245	138	46	756	30
1962	224	1,029	346	387	186	110	1,148	100
1963	446	1,388	325	469	386	208	1,777	214
1964	326	1,687	337	488	525	337	2,120	274
1965	158	1,999	362	611	562	464	2,233	222
1966	418	2,394	399	771	628	597	2,374	308

* At par value. Since 1962 the par value has been adjusted for changes due to the operation of linkage clauses.

– No data available.

Source: Annual Reports of the Bank of Israel.

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[106] One of the instruments for ensuring Government control in the securities market is the Securities Commission, whose approval is necessary for new issues. The law regulating the conditions of approval is extremely obsolete and a more modern law of securities is now being considered by the Knesset.

permitted to issue securities which were bought by Israeli residents in foreign currency out of Tamam deposits (which are transferable). The investments in these securities were a substitute for dollar-linked bonds, whose issue was stopped after the 1962 devaluation. The utilization of receipts from the issue of such securities is also subject to government approval.

TABLE 24. Volume of Trading on the Stock Exchange: 1960–1966 (IL millions)

	1960	1961	1962	1963	1964	1965	1966
Shares	38.2	46.5	68.4	236.1	222.2	91.3	59.3
Bonds	33.5	41.4	54.2	45.4	72.8	103.8	131.9
Total	71.7	87.9	122.6	281.5	295.0	195.1	191.2

Source: Annual Reports of the Bank of Israel.

In concluding this survey of the securities market two additional points should be noted with regard to its structure and activity:

a) The commercial banks dominate the securities business, both as underwriters and as stock brokers. It is difficult to say whether the role of the banks was an incentive or a stumbling-block to the development of the market,[107] but there is no doubt that it strengthened their position as Israel's dominant financial intermediaries.

b) One of the reasons why the banks occupied a prominent position in the securities market is related to the modest scale of the market. The number of share issues between 1959 and 1966 was 125 — less than 15 per year. Nor was the volume of trade on the stock exchange very great, as may be seen from Table 24. In these conditions it was difficult for large specialized institutions to develop and the banks therefore remained in charge.[108] This was, among other things, reflected in the fact that a considerable number of companies whose securities were listed on the stock exchange were subsidiaries of the banks or affiliated bodies of some sort.

5. SUMMARY

The financial markets in Israel have come a long way since the establishment of the State. Of particular significance were the following developments:

- Establishment of the Bank of Israel — this made it possible to regulate the operation of the monetary system, both as regards the payments mechanism and the macro-economic effects of changes in the volume of credit and the money supply.
- A radical change in the structure of the banking system — with the liquidation of most of the small institutions (especially the credit

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107) In the early stages the participation of the banks was certainly an incentive. Later on this is not so clear – one of the factors accelerating the development of the capital market and making it most efficient is the competition between various sub-markets, where independently operating financial institutions are at work.

108) Participation in a wide range of financial activities was of particular benefit to the banks when no monetary restraint curbed their traditional short-term credit business.

cooperative societies) and the concentration of the bulk of the banking business in the hands of a few large institutions operating numerous branches.

- Considerable diversification of the financial intermediaries, especially in the "financial institutions" sector — the quantitative development of this sector was due mainly to the mobilization of funds by the Government, either directly or according to terms determined by it and subject to its instructions in regard to the allocation of funds.
- The transition of the social insurance funds to pension agreements — resulting in difficult actuarial problems which did not exist with regard to provident funds.
- The widespread use of value-linking in order to overcome the deleterious effects of inflation on saving. Since the devaluation of 1962 these arrangements have been undermined as a result of the financial institutions being permitted, with Government support, to grant unlinked loans, while their obligations remain linked.
- Considerable expansion in the securities market — even though its role in generating capital for investment (especially equity capital) is still limited and Government control is tight.

The quantitative and qualitative developments described in the course of this survey, as well as the resulting limitations and difficulties, do not in themselves indicate the efficiency with which the financial markets fulfil their functions. For such an evaluation it would be better to isolate the monetary sector from other parts of the capital market, despite the fact that there are substitution relationships between them. The main reason for such a separation is the difference in the criteria used to gauge the efficiency of the monetary sector on the one hand and the other financial sectors on the other.

The monetary sector may be generally tested on two counts: the stability and the efficient operation of the payments mechanism; and the extent to which changes in the money supply and the volume and price of credit remain in keeping with the need for the orderly growth of the economy.

The well-developed system of banking institutions and its supervision by the Bank of Israel generally ensured the stability and effective operation of the payments mechanism. Even the collapse of three banking institutions in early 1967 did not cast any doubt on the general soundness of the payments mechanism — owing to the resolute intervention of the Bank of Israel. At the same time, this episode showed that there is a need for a re-examination of the legal framework in which the banking institutions operate and for increased stringency in supervising their activities. To this end steps are now being taken to enact a new banking law which will meet the need for the regulation and control of the banking system as it is today (the present Banking Ordinance was enacted in 1941 and has been but little amended).

In the field of monetary policy, however, developments have been less than satisfactory. The Bank of Israel has been obliged to operate in this sphere with its hands ties in regard to several important matters. Firstly, it received no assistance in neutralizing the expansionary effect of the foreign currency assets it accumulated. The establishment of an exchange fund from local Government receipts could have served to offset the expansion arising from this accumulation (a tight fiscal policy and the creation of budgetary surpluses could, of course, have achieved the same results). Secondly, the Bank was discouraged from embarking upon an active open market policy (to curb expansion due to foreign currency accumulation) lest its sales impede the flotation of Government bonds. Thirdly, the restrictions imposed by the Interest Law reduced the efficiency of the contractionary measures taken by the Bank, since the fixing of the price of credit below the equilibrium level leads in itself to increased demand for credit.

The contractionary measures taken by the Bank of Israel — mainly the raising of liquidity ratios — were thus inadequate to curb the accelerated monetary expansion. The counteraction of expansionary factors of the dimensions that existed in the Israeli economy, particularly in 1962 and 1963, required close coordination between fiscal and monetary policy. The latter can be in itself an effective instrument with regard to minor deviations from equilibrium but not when the economy is subject to a demand pressure of an enormous magnitude.

There is, however, a greater chance of an effective monetary policy when the central bank is in possession of more effective instruments. In 1966 conditions were created which enabled the Bank of Israel to commence operations in the open market. To what extent this change will actually lead to increased efficiency in the conduct of monetary policy will be discernible when renewed expansion of economic activity gets under way and contractionary measures will be required. The years 1966 and 1967 did not provide a test, since in these years the Bank was required to do the opposite — to encourage monetary expansion, which is easier than a policy of restraint. Nevertheless, 1967 witnessed the accumulation of foreign currency on a large scale, and the expansionary effects are liable to call for restrictive counteraction when signs of inflationary pressure begin to manifest themselves.

It may be assumed that in the long run the accumulation of foreign currency will cease to constitute an expansionary factor, at least on a scale similar to that of the early sixties. This will somewhat facilitate monetary policy, though expansionary factors may also emerge from the domestic sectors (deficit financing of the public sector, for instance). As the Bank of Israel can now engage in open market operations, there are good chances that it will be able to curb these expansionary tendencies more effectively than in the past. The repeal of the Interest Law may also make a marked contribution to the effectiveness of monetary policy, and be a positive factor as regards the development of the capital market in general. The existence of the Interest Law hinders both the encouragement of saving and the efficient allocation of funds for investment. Repeal of the present law, which will serve the interests of sensible economic policy, will not necessarily harm those who today enjoy cheap credit. If it is desirable to support them, they should be supported directly — and not indirectly through the Interest Law ceiling, with its distorting effect on the capital market.

The banking institutions also have their part to play in allocating credit and channelling finance from savers to investors, so that some of the things said below about the non-monetary sectors of the capital market also apply to them. The functions of the capital market, as stated above, are mainly two: to allocate current saving to various uses in order to finance investment (the efficient operation of the capital market also affects the level of saving; and to establish a convenient institutional framework for transferring financial claims between various economic units.

These two functions are interrelated, and efficient performance greatly affects economic activity as a whole.[109] Three main factors affect the allocation of saving: a) yield differentials among capital market instruments; b) various institutional restrictions affecting the flow of funds, and not expressed in terms of yield differentials;[110] c) Government control, which has an effect on the allocation of credit similar to that of the institutional restrictions.

Yield differentials reflect the differences between various financial instruments as regards the cost of acquiring and servicing them, the risk involved in holding them, and their relative liquidity. It is clear, therefore, that yield differentials are due to the operation of purely economic factors — any attempt to prevent the operation of such factors is bound to hinder the effective performance of the allocative functions of the capital market.

When we test the capital market in Israel in the light of the various criteria described above, considerable doubt arises as to its capacity to fulfill efficiently its allocative functions. The limitations of the Interest Law largely reduce the allocative effect of yield differentials, since Government or Government-guaranteed securities have been offered at rates of interest very near the permitted maximum. This could have been remedied by repealing the Interest Law, except that the complications which have arisen in recent years in connection with value-linking diminish the effectiveness of this simple solution. As mentioned above, a good deal of long-term credit is now given unlinked, while the financial institutions and the Government continue to borrow subject to value clauses.

There are many good reasons for doing away with value-linking altogether; but relieving only the borrowers makes no economic sense; value-linking should either be applied to both lender and borrower, or be repealed entirely. A decision to do away with value-linking will oblige the Government to adhere to a policy of encouraging saving by ensuring stability. There is thus an interrelationship between a stabilizing fiscal and monetary policy (which we have discussed in connection with the activity of the monetary sector) and the efficiency of the capital market. Correction of the existing asymmetry in linkage arrangements will also reduce the need for Government intervention in the capital market, since the capacity of the financial institutions to link the value of the money they borrow and to lend without value-linking is conditional upon a Government guarantee to cover any discrepancies that may arise.[111]

[109] This refers, of course, to a market economy.

[110] Capital rationing is due to the fact that no borrower (apart from the Government) can secure any amount of funds by simply offering a higher price. See on this point in R. W. Goldsmith, The Flow of Capital Funds in the Post-War Economy, N.B.E.R., New York, [illegible], pp. [illegible].

[111] This is done by an "insurance" arrangement by which the borrowers pay a premium at the rate of [illegible]. The fund accumulated from premium payments is used for covering linkage differentials, but there is of course no way of knowing whether it will in fact be adequate for the purpose (this depends on the rate of price rises). The Government must therefore stand behind the fund.

The foregoing remarks are not intended as a criticism of all Government intervention in the capital market. In the conditions of the Israeli economy, where large aid funds and foreign loans were channelled through the Government, its activities were bound to affect the functioning of the capital market. The doubts we expressed focused on the degree of Government control over the raising and allocation of domestic saving. The expansion of domestic saving must be one of the major objectives of economic policy in Israel in the near future. In theory, it is possible to impose this task on the Government and waive the contribution of private saving; but experience in the world at large, as well as in Israel, indicates that this course may very well fail to ensure adequate saving — or may lead to inefficient allocation of the savings generated. If it is decided to lay stress on private saving, there is no doubt that a reform in the structure and the operation of the financial markets will be necessary if this object is to be achieved.

Such a reform would have to be comprehensive, for — as we have seen above — there is a close interrelationship between the various markets we have discussed: the social insurance funds are a main source of funds for the financial institutions; the latter are connected with the banking institutions and the Government through ownership and control; and the development of the securities market depends on the degree to which firms resort to non-governmental financing and on the Government's willingness to allow capital to be raised in the market without close scrutiny of its allocation. A reform of this scope requires careful study and is outside the bounds of this summary. We would, however, point out that such a reform will have to find a solution to several basic problems:

a) How to generate an adequate volume of saving after the repeal of the value-linking system and how to ensure that the social insurance funds will be able to meet their obligations after linkage is terminated.

The Israeli experience, which, of course, has precedents in other parts of the world, shows that stability is a condition for financial saving — this is a policy goal which lies outside the sphere of measures for encouraging the capital markets. A solution to the problems of the social insurance funds requires a careful investigation of their actuarial position, and the scope of the liabilities they undertake vis-a-vis their members. This too falls beyond the range of financial policy and has repercussions on social welfare policy.

b) How to encourage firms to resort to the capital market for financing and to increase the readiness of the saving public to invest in securities.

A solution to these problems will necessitate changes in company legislation and in business procedures now prevalent in Israel, together with a reduction in present possibilities of financing from Government sources. Many firms do not bother to apply to the capital market because they can find finance from sources under direct or indirect Government control. On the other hand, firms wishing to use the market cannot do so because it is under Government control.

c) Does the institutional structure of the capital markets in Israel facilitate fulfilment of the functions imposed on these markets in developed Western countries?

Among the matters which require further study, mention should be made of the scope of control exercised by banking institutions over the activities of financial institutions on the one hand and the securities market on the other; the size of the firms operating in these markets, as well as the types of financial institutions now existing and the scope of activity of each of them.

Any attempt to answer these questions will also help to clarify the basic problem: to what extent do the bodies responsible for economic policy in Israel really wish to assign to the capital markets the responsibility for carrying out the functions of which they are capable in promotion of savings and their allocation for investment.

CHAPTER EIGHT: REGIONAL DISTRIBUTION

A. DEVELOPMENT IN THE PAST

A balanced geographical distribution of the Jewish population and the national economy is important for political, economic and security reasons.

For political reasons it is necessary that sparsely populated areas like the Negev, or areas where the proportion of Jews in the population is low, like Central Galilee, should be populated by Jews. For security reasons it is necessary to prevent population and productive enterprises from concentrating in a small, vulnerable area, especially in the Tel Aviv conurbation. Socially and economically, moreover, such overcrowding is likely to lead to serious difficulties in the supply of public services, such as transport and sanitation.

When the State of Israel was founded, there was a severe imbalance in the geographical distribution of the Jewish population and the national economy. Forty-two percent of the total Jewish population lived in the Tel Aviv District alone, whereas the Southern District was practically uninhabited and Central Galilee had no Jewish population at all. In order to arrive at a better, more balanced distribution, the Government adopted a population dispersal policy. Mass immigration facilitated the implementation of this policy, since a considerable portion of new immigrants could be sent to areas and settlements which the Government intended to develop. Under this policy, hundreds of villages and dozens of urban settlements were established and populated. Policy and security considerations were predominant in the establishment of settlements all along the borders and sometimes outweighed purely economic and social considerations in the development of new urban centers.

The boundaries of the development areas, the order of priorities in populating them, and the measure of encouragement given them varied from time to time, according to whether the targets were being attained or not. As a particular region became populated and developed economically and socially, it received less preferential treatment. For instance, after the goals of this dispersal policy had been attained in the coastal strip, and Lydda, Ramle, Ashkelon and similar localities had been adequately settled, the entire coastal strip ceased to be considered a development zone and was declared a developed area.

This is not the place — nor would it be very useful — to examine to what extent the population dispersal policy was successful in achieving its targets. The changes in boundaries and in the order of priorities were as a rule more a matter of practice and of individual decisions adopted by various Government offices than of a comprehensive standard policy. Therefore, we shall mainly confine ourselves to reviewing the demographic and economic developments which have taken place in recent years in the development areas within their present boundaries as compared with developments in the coastal strip. In discussing the early years, a comparison of this kind would also have to include areas which at one time were development zones and received Government encouragement as such, but are now considered developed areas. Hence, confining ourselves only to the present development areas means that Government policy will appear to have been less successful than it actually was.

In the present program, the coastal strip, according to the decision of the Cabinet Committee for Population Dispersal in August 1965, was defined as the territory comprising the Haifa, Tel Aviv and Central districts — the developed districts also including Nahariya and Acre, which administratively belong to the Northern District, and Ashdod and Ashkelon, which are part of the Southern District. The development zones thus include the Northern, Southern and Jerusalem districts with the exception of the towns of Nahariya, Acre, Ashdod and Ashkelon.

1. EXISTING TRENDS

From 1948 until 1965 the trend towards the dispersal of the Jewish population was dominant (Table 1). As from that year, however, the share of Jewish population in the development areas ceased to increase because of the considerable drop in immigration (and its share in the total population increment) and the different social background of the new immigrants, who could no longer to the same extent be sent to development areas.

During 1948—1965, the percentage of the population in the coastal strip declined, compared with that in the development zones. As against 21% of the entire Jewish population living in 1948 in areas now defined as development zones, there were 26% living there by 1965.

This general trend, as shown by the division between the development areas and the coastal plain, did not always apply equally to all districts. Proportionally, the population in the coastal areas declined as the share of the Tel Aviv and Haifa districts fell, while at the same time the proportion in the Central District increased.

The Southern District benefited most from the population increment. In 1948 it was practically uninhabited, with less than 1 percent of the Jewish population, whereas by 1966 it accounted for 8.4% of the total.

The percentage of the Jewish population in the Northern District, on the other hand, increased only slightly until 1963 and from then until 1966 actually declined. From 8.2% in 1948 it grew to 8.6% in 1963, to fall again to 8.2% in 1966. The share of the Jerusalem District declined constantly, from 11.7% in 1948 to 9.4% in 1966. It should be noted, however, that between 1963 and 1966 the share of the Tel Aviv District also declined, though in absolute figures its population grew more than that of all the development areas together.

TABLE 1. Population of Israel in Selected Years, by District, 1948–1966 (in thousands and percentages)

District	1948[1]		1954[1]		1958[1]		1963[2]		1965[2]		1966[2]	
	total	Jewish	total	Jewish	total	Jewish	total	Jewish	total	Jewish	total	Jewish
Israel, total	872.7	716.7	1,717.8	1,526.0	2,031.7	1,810.1	2,430.1	2,155.6	2,598.4	2,299.1	2,657.4	2,344.9
Development areas, total	236.8	149.8	483.9	345.1	585.2	441.9	735.0	558.9	791.1	599.2	810.2	609.4
Jerusalem District	87.1	84.1	157.4	154.1	178.2	176.0	208.9	204.4	221.2	216.6	225.6	220.8
Northern District	128.3	59.0	239.2	137.2	280.9	155.3	335.3	184.6	355.8	191.5	364.2	192.1
Southern District	21.4	6.7	87.3	53.8	126.1	110.6	190.8	169.9	214.1	191.1	220.4	196.5
Coastal area, total	618.8	549.7	1,234.0	1,180.9	1,446.5	1,368.2	1,695.1	1,596.7	1,807.3	1,699.9	1,847.2	1,735.5
Haifa District	189.8	142.5	311.9	286.8	387.3	329.8	450.5	389.0	479.7	412.5	488.5	418.7
Central District	125.3	105.5	373.9	351.4	417.4	393.6	489.6	459.4	532.7	499.7	548.1	513.5
Tel Aviv District	303.7	301.7	548.2	542.7	641.8	644.8	755.0	748.3	794.9	787.7	810.7	803.3
Unknown	17.1	17.1										
Whole of Israel in percentages	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Development areas, total	27.1	20.9	28.2	22.6	28.8	24.4	30.2	25.9	30.4	26.1	30.5	26.0
Jerusalem District	10.0	11.7	9.2	10.1	8.8	9.7	8.6	9.5	8.5	9.4	8.5	9.4
Northern District	14.7	8.2	13.9	9.0	13.8	8.6	13.8	8.6	13.7	8.3	13.7	8.2
Southern District	2.4	0.9	5.1	3.5	6.2	6.1	7.9	7.9	8.2	8.3	8.3	8.4
Coastal area, total	70.9	76.7	71.8	77.4	71.2	75.6	69.8	74.1	69.6	73.9	69.5	74.0
Haifa District	21.7	19.9	18.2	18.8	19.0	18.2	18.5	18.0	18.5	17.9	18.4	17.9
Central District	14.4	14.7	21.7	23.0	20.5	21.7	20.1	21.3	20.5	21.7	20.6	21.9
Tel Aviv District	34.8	42.1	31.9	35.6	31.6	35.7	31.1	34.7	30.6	34.3	30.5	34.2
Unknown	2.0	2.4										

Note. [1]The populations of Acre and Nahariya are included in the Haifa District, and the populations of Ashdod and Ashkelon in the Central District.
Source: Central Bureau of Statistics.
[illegible]

The dispersal of the population as a whole was much less than that of the Jewish population, since the geographical distribution of the minority population was less centralized from the start. Nevertheless, over half the minority population is in the Northern District.

a. The Effect of Immigration

In the past, population dispersal was carried out mainly by a large portion of the new immigrants being sent to development areas. Accordingly the dispersal of the population was to a large extent contingent on that portion of the Jewish population increment which was due to immigration (see Table 2).

TABLE 2. The Share of Immigration in the Jewish Population Increment and Population Dispersal, 1948—1966 (in thousands and percentages)

	1948—1951	1952—1954	1955—1957	1958—1960	1961—1963	1964—1966
Total Jewish population increment	754.8	121.6	226.7	148.4	244.4	189.2
Jewish population increment due to immigration	684.2	51.2	181.0	72.4	168.1	94.9
Share of immigration in Jewish population increment	90.6	42.1	80.0	48.8	68.8	50.1
Change in share of development areas in total Jewish population, percent	+1.8	−0.1	+1.2	+0.7	+1.3	+0.1

Source: Central Bureau of Statistics.

The share of the development zones in the total Jewish population advanced from 20.9% to 22.7% during the years of mass immigration, from 1949 to 1951, and receded during the years when immigration was on the wane, from 1952 to 1954, to increase once again when immigration revived in 1955, so that by 1957 these areas comprised 23.9% of the total.

A similar process also took place in the subsequent periods. Whenever immigration fell back as a source of the Jewish population increment, the portion of the population which could be sent to the development zones also went down. In recent years, the proportion of immigrants sent by the Jewish Agency to the development zones even decreased. Of the immigrants taken care of by the Jewish Agency who were housed in various settlements, two-thirds were sent to development areas in 1960 (see Table 3), as against only half in 1964 and less than one-third in 1966. Since the remaining immigrants who did not require the assistance and direction of the Jewish Agency presumably settled in the more established parts of the country, mainly in the coastal strip, it appears that the overwhelming majority of immigrants in that year settled in the coastal strip as soon as they arrived.

The extent to which immigrants are directed by the Jewish Agency to places of settlement depends on their occupational structure and their ability to support themselves and obtain housing, etc., by their own means or with the help of relatives. It appears that the assistance given to immigrants in the development areas was not sufficient to offset the economic, social and cultural attractions of the coastal area, which generally caused immigrants to prefer it to the development zones. Recently, in fact, in consideration of their wishes, the Jewish Agency has been sending a considerable proportion of immigrants to the coastal area.

TABLE 3. Direction of Immigrants to Development Areas: 1960—1966 (in absolute figures and in per cen

	1960	1961	1962	1963	1964	1965	1966
Total immigrants	23,643	46,653	59,600	62,156	52,456	28,795	13,610
1. Immigrants not directed anywhere	7,364	9,916	8,116	8,900	6,291	5,162	2,897
2. Immigrants sent by Jewish Agency straight on arrival to housing in various settlements[1])	16,279	36,737	51,484	52,256	46,165	23,633	10,713
(As percentage of total immigration)	(68.9)	(78.7)	(86.4)	(84.1)	(88.0)	(82.1)	(78.7)
3. Immigrants sent to development areas[1]	10,381	21,939	25,860	26,789	17,692	9,888	3,372
(As percentage of total immigrants directed by Jewish Agency)..........	(63.7)	(59.7)	(50.2)	(51.3)	(38.3)	(41.8)	(31.5)
4. Immigrants sent to coastal areas	5,898	14,798	25,624	25,467	28,473	13,745	7,341
(As percentage of total immigrants directed by Jewish Agency).	(36.3)	(40.3)	(49.8)	(48.7)	(61.7)	(58.2)	(68.5)
5. Immigrants integrated in coastal area (1)+(4)	13,262	24,714	33,740	35,367	34,764	18,907	10,238
(As percentage of total immigrants)	(56.1)	(53.0)	(56.6)	(56.9)	(66.3)	(65.7)	(75.2)

1) Development areas are defined as areas outside the coastal region and do not include Ashdod, Ashkelon, Acre and Nahariya (which by the Jewish Agency's definition are included in the development areas).

Source: Absorption Department of the Jewish Agency.

b. Internal Migration

Israel has a considerable internal migration. Many people change their places of residence within the same district or move from one district to another. From the 1961 Population and Housing Census it appears that during 1956—1961 over a quarter of a million people changed their places of residence, but most of this movement took place within the coastal area.

Only net migration from one district to another can affect the dispersal of the population. It appears that between 1956 and 1961 only two districts received a population increment as a result of this migration, while the

TABLE 4. Jewish Population Movements between Districts, 1956—61

District	Total arrivals	Total Departures								Net arrivals
		Coastal Region(total)	Haifa District	Central District	Tel Aviv District	Development Areas(total)	Northern District	Jerusalem District	Southern District	
Israel, total	267,510	191,620	44,340	66,720	80,560	75,890	37,780	19,055	19,055	0
Coastal area, total	207,885	160,705	34,610	54,935	71,160	47,180	22,905	13,640	10,635	+ 16,265
Haifa District	41,380	28,230	19,925	4,125	4,180	13,150	8,965	2,030	2,155	– 2,960
Central District	47,095	33,575	4,490	19,265	9,820	13,520	5,705	4,040	3,775	– 19,625
Tel Aviv District	119,510	98,900	10,195	30,945	57,760	20,610	8,335	7,570	4,705	+ 38,850
Development areas, total . .	59,625	30,915	9,630	11,785	9,500	28,710	14,875	5,415	8,270	– 16,265
Northern District	21,030	9,310	4,285	2,785	2,240	11,720	8,710	1,535	1,485	– 16,750
Jerusalem District	14,655	9,505	2,865	3,285	3,355	5,150	2,260	1,570	1,315	– 4,400
Southern District	23,840	12,100	2,480	5,715	3,905	11,740	3,850	2,320	5,570	+ 4,785

Source: Central Bureau of Statistics.

TABLE 5. Jewish Population Movements Between Districts, 1965

District	Total	Coastal Areas total	Haifa District	Central District	Tel Aviv District	Development Areas, total	Northern District	Jerusalem District	Southern District	Unknown	Incoming, total
Israel, total	128,824	81,689	22,182	23,824	35,703	43,590	15,588	7,414	20,588	3,545	
Coastal areas, total	92,659	62,512	15,972	17,624	28,916	27,388	10,322	4,976	12,090	2,759	11,170
Haifa District[1]	23,122	13,664	8,353	2,908	2,403	8,628	4,047	1,068	3,513	830	940
Central District	23,806	15,246	2,773	6,712	5,761	7,678	2,538	1,403	3,738	882	–18
Tel Aviv District	45,951	33,602	4,846	8,004	20,752	11,282	3,739	2,505	5,038	1,067	10,248
Development areas, total	35,783	19,054	6,121	6,166	6,767	15,949	5,240	2,430	8,279	780	–7,807
Northern District[1]	8,258	4,393	1,887	1,207	1,299	3,692	1,989	447	1,256	173	–7,330
Jerusalem District	4,893	2,760	800	833	1,127	1,978	588	522	868	105	–2,521
Southern District	22,632	11,911	3,434	4,136	4,341	10,279	2,663	1,461	6,155	442	2,044
Unknown	182	123	89	14	20	53	26	8	19	6	–3,363

1) The Acre Plain is included in the Haifa District.

Source: Central Bureau of Statistics, Population Register, 1965.

remaining four had their population reduced by it (see Table 4). The Tel Aviv District received an increment of close to 40,000 and grew at the expense of both the development zones and the other coastal areas.

The Southern District thus received an increment of almost 5,000, but on the whole the development areas lost over 16,000 who went to live in the coastal area. The Northern District had a large negative migration balance and lost close to 17,000. A similar picture is obtained from the 1965 figures of the Population Register (Table 5), which show that the coastal areas received an increment of over 11,000 (after deduction of those who left them), who practically all settled in the Tel Aviv sub-district.

About half the people who moved to the Tel Aviv District came from the development zones, every one of which had a negative migration balance with the Tel Aviv District. The Jerusalem and Northern districts also had a negative balance with the Haifa and Central districts, but the Southern District had a negative balance with the Haifa District and a positive one with the Central District.

The latter was the only development area whose total migration balance with the other districts was positive — in 1965 it received an increment of about 2,000 — but most of this increment came from the Jerusalem and Northern districts rather than from the coastal strip. Particularly unfavorable was the migration balance of the Northern District, which lost 7,300.

c. Composition of Internal Migration

The main migration movement was of new immigrants, while old-timers tended to migrate very little. Close to half the people who came to the development areas and over half of those who left them were new immigrants who had arrived in Israel after 1961. Immigrants who have been in the country for a long time played a larger part in the internal migration along the coastal strip than in the development zones.

TABLE 6. Change in Composition of the Population, by Continent of Birth and by District, as a Result of Internal Migration, 1965

District	All continents of birth	Israel	Asia — Africa	Europe — America	Unknown
Development areas					
Jerusalem District	−2,521	−1,022	−816	−673	−10
Northern District	−8,846	−1,515	−2,982	−4,326	−23
Southern District	+2,044	+1,010	+181	+823	+30
Coastal area					
Haifa District	+2,456	−159	+1,299	+1,293	+23
Central District	−18	+724	−329	−440	+2[illegible]
Tel Aviv District	+10,248	+1,251	+4,354	+4,624	+19
Unknown	+3,363	+289	+1,707	+1,301	+66

Source: Central Bureau of Statistics, Population Register, 1965.

Relatively more European- and American-born left the Northern District than came to it. Thus, the effect of internal migration combined with that of immigration to cause the Asian- and African-born population to concentrate in that area.

2. DEMOGRAPHIC CHARACTERISTICS OF THE JEWISH POPULATION, BY DISTRICT

a. Composition by Countries of Origin

There are considerable differences between the various districts in the composition of their population by continent of birth. In the coastal area the share of European- and American-born is higher than in the development zones, where the share of the Asian- and African-born is prominent (see Table 7). Likewise, the average length of time that immigrants have been in the country is lower in the development zones than in the coastal strip.

By the end of 1965, 47% of the entire population of the Southern District was Asian- and African-born, whereas the American- and European-born constituted only 19%. A reverse ratio was to be found in the Haifa and Tel Aviv districts, where about 40% were European- and American-born, while Asian- and African-born made up only about 20%. In the Central District the two origin-groups are almost of the same size, but the average length of stay in the country of the European- and American-born is greater than in the Northern and Southern districts.

The differences in the composition of the population are still more striking if the development towns are compared with the older urban centers. At the end of 1963 only 3.3% of the total population of the development towns were old-timers who had been in Israel before 1948, as against 33% on a national average. By continent of birth 80% of the residents of the development towns in 1963 were of Asian-African birth or descent.[1]

The veteran population was not attracted to the development towns, so that they are populated mainly by immigrants sent there by the Jewish Agency. By 1965 the Asian-African origin-group constituted 55% of the total population of the 21 development towns, and close to half of them had come to Israel after 1961 (see Table 8). Twenty-seven percent were Israel-born and only 17% American-European-born. Thus, their composition is totally different from that of the Israeli population as a whole. The share of the Asian-African group in the development towns is twice as high as in the population at large, and of the European-American born only half as high.

This situation, as well as the predominance of immigrants from the same country in the various development towns, shows that the integration of the ethnic communities in these towns has not yet proceeded very far. However, though the concentration of members of the same ethnic group in one locality slows down their adaptation to local conditions, it also reduces the dangers and social tensions involved in the breakdown of ethnic frameworks as a result of a sudden change in values and an abrupt transition to a heterogeneous society.

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[1] Manpower Planning Authority: Manpower in the Development Towns, December, 1964, p. 2.

TABLE 7. Jewish Population by District, Continent of Birth and Period of Immigration, 31 December 1965 (percentages)

District and sub-district	Total	Total, %	Israel-born	Born in Africa and Asia						Born in Europe and America						Unknown
				Total	immigrated					Total	immigrated					
					before 1948	1948-54	1955-60	1961-65	un-known		before 1948	1948-54	1955-60	1961-65	un-known	
Israel, total	2,299,078	100.0	40.0	27.4	2.1	13.4	5.6	6.1	0.1	32.4	10.9	13.0	3.8	4.3	0.5	0.2
Jerusalem District	216,238	100.0	52.6	26.9	3.4	13.3	5.5	4.5	0.1	20.2	8.3	6.4	2.3	2.8	0.4	0.3
Northern District	234,868	100.0	38.6	34.3	7.5	11.9	10.2	11.7	0.1	26.9	6.7	9.0	4.0	6.7	0.5	0.1
Haifa District	368,099	100.0	37.0	20.4	1.4	9.7	4.1	5.0	0.1	42.5	14.0	18.7	4.1	5.1	0.7	0.2
Central District	437,432	100.0	40.7	30.3	1.9	18.7	4.0	5.6	0.1	28.9	8.3	12.6	3.2	4.3	0.5	0.1
Tel Aviv District	788,278	100.0	39.8	21.1	3.3	13.2	3.0	1.5	0.1	39.0	15.5	15.9	4.2	2.8	0.5	0.1
Southern District	249,280	100.0	34.5	46.7	0.4	12.3	14.6	19.4	0.1	18.7	2.4	5.6	3.8	6.4	0.4	0.1

Source: Central Bureau of Statistics.

TABLE 8. Population of Development Towns and Jewish Population of Israel, by Continent of Birth and Period of Immigration, 31 December 19[illegible]
(in thousands and percentages)

Continent of birth and period of immigration	Population of 21 development towns		Continent of birth and period of immigration	
	thousands	percentages	thousands	percentages
Total	196.2	100.0	2,299.1	100.0
1. Israel-born	53.6	27.3	928.2	40.4
2. Asian-African-born	108.1	55.1	651.4	28.3
Immigrated: before 1948	0.5	0.3	51.5	2.2
1948–1954	17.7	9.0	325.2	14.2
1955–1960	36.9	18.8	129.2	5.6
1961–1965	52.9	26.9	145.5	6.3
Period of immigration unknown	0.1	0.1	–	–
3. European-American-born	34.2	17.4	719.5	31.3
Immigrated: before 1948	2.5	1.3	245.6	10.7
1948–1954	6.9	3.5	287.5	12.5
1955–1960	7.3	3.7	83.1	3.6
1961–1965	16.9	8.6	103.3	4.5
Period of immigration unknown	0.6	0.3	–	–
Continent of birth unknown	0.3	0.2	–	–

Source: Manpower Planning Authority: Annual Report, 1966, Table VIII-1, p. 106.

b. Age Structure

There is also a distinct difference between the age-distribution of the population in the development areas and in the older, established districts, and the difference is still more striking when the development towns are compared with Tel Aviv and Haifa. The development districts have a high proportion of children (see Table 9): at the end of 1965 children up to the age of 14 made up about 42% of the population of the Southern District as against averages of 32% in the whole of Israel, and 27% in Haifa and Tel Aviv.

Families in development towns are bigger than in the country as a whole. In 1963 there were almost twice as many large families (of six members and more) in the development towns as in the Jewish population at large, and they accounted for 60% of all families in the development towns, as against 33% on a general average.

As a result of this age-structure, the percentage of the population of working age is lower in the development towns. As in the labor force participation rate of women, so that breadwinners in the development towns have a heavier burden to carry than in the rest of the country, particularly in the major towns. The problem, however, is even more serious than these facts indicate; differences in occupational structure and standards, which result in a considerable disparity in per capita income and the percentage of social welfare clients, will be discussed below.

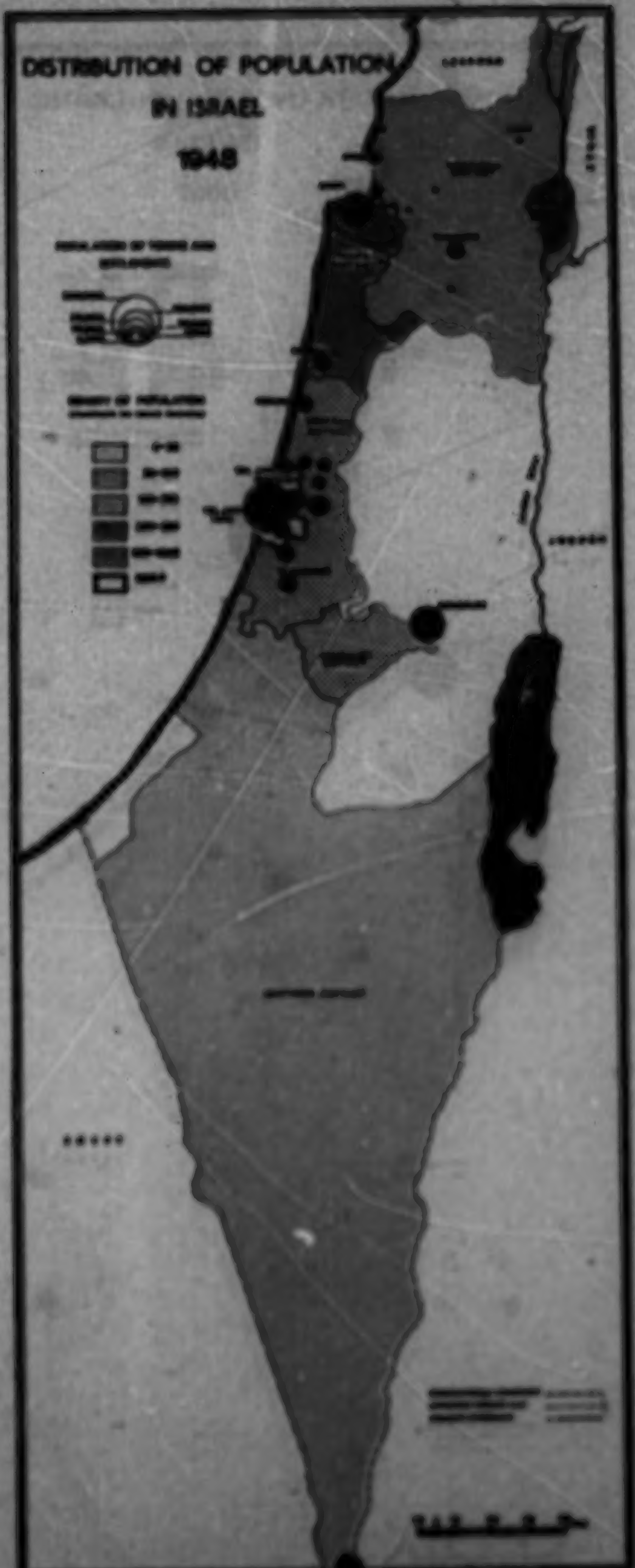
TABLE 9. Jewish Population, by Age and Sub-district

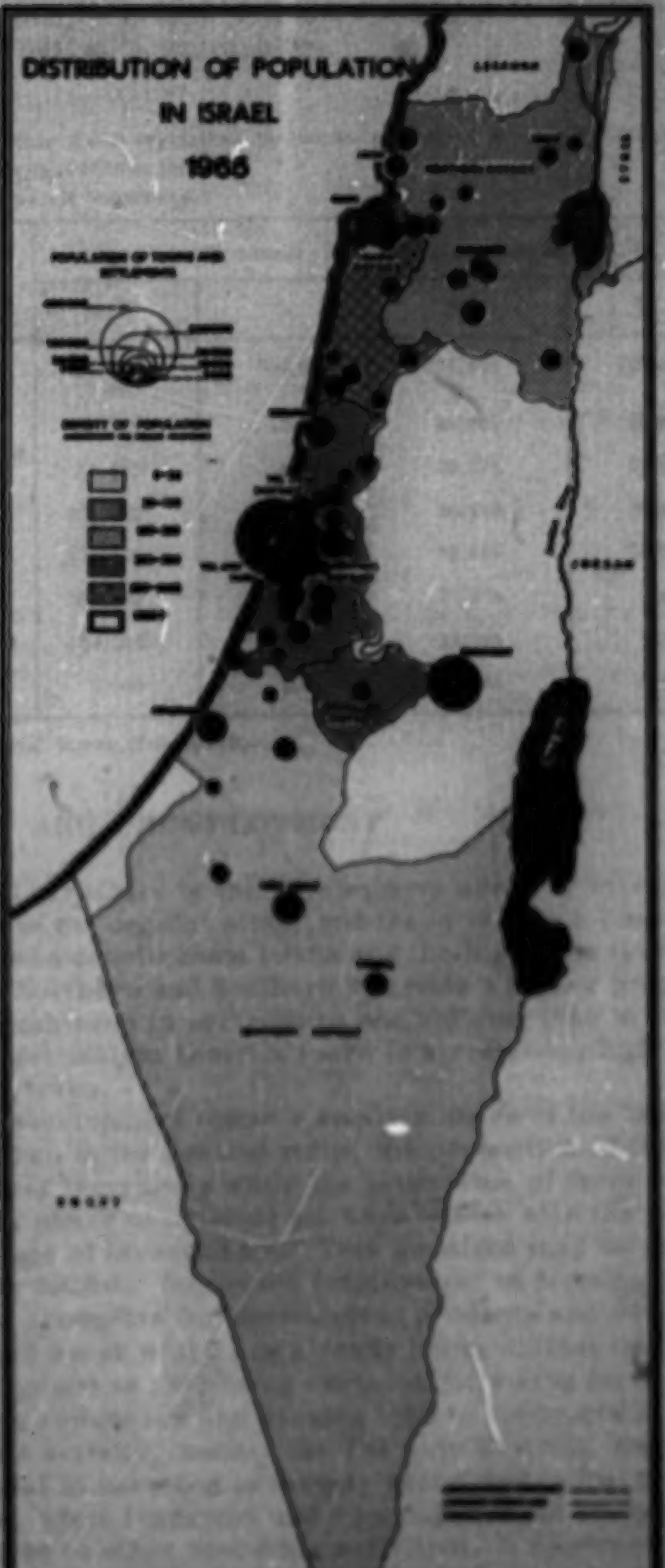
Sub-district	Total	Age groups, percent					
		total	0–14	15–29	30–44	45–64	65 and over
Israel, total	2,302,333	100.0	32.1	23.6	18.3	19.5	6.5
Jerusalem sub-district	216,238	100.0	35.9	24.2	17.5	15.9	6.5
Safad sub-district	60,112	100.0	40.7	24.1	16.5	14.6	4.0
Kinneret sub-district	37,695	100.0	38.4	25.3	16.2	15.2	4.9
Jezreel sub-district	84,287	100.0	36.1	25.2	16.5	17.3	4.9
Acre sub-district	62,776	100.0	35.1	23.4	18.4	17.5	5.6
Haifa sub-district	295,124	100.0	27.1	22.3	19.4	23.6	7.6
Hadera sub-district	72,975	100.0	32.3	23.7	18.4	19.2	6.4
Sharon sub-district	98,514	100.0	32.9	24.6	16.6	19.7	6.2
Petah Tikva sub-district	153,597	100.0	32.9	24.3	17.6	18.9	6.3
Ramle sub-district	69,845	100.0	37.9	24.0	17.2	15.7	5.2
Rehovot sub-district	115,476	100.0	34.1	23.9	17.4	18.6	6.0
Tel Aviv sub-district	788,278	100.0	27.1	23.0	19.5	22.8	7.6
Ashkelon sub-district	118,920	100.0	41.9	23.6	17.3	13.6	3.6
Beersheba sub-district	130,360	100.0	42.4	24.6	18.2	11.8	3.0

Source: Central Bureau of Statistics, Population Register.

c. Educational Standards

The average formal educational level of the Jewish population in the new towns and townships is considerably lower than in the older ones. In the Population and Housing Census, 1961, it was found that the percentage of adults aged 14 years and above who had had no formal education at all was twice as low in the older towns as in the new ones: 10% against 21%. The proportion of adults with not more than four years of schooling was also higher in the new towns: 11.2% as against 6.7% in the older ones. The same ratio of 1:2 was also found in the percentages of those with 11 years of schooling and more: 14.3% of the population in the newer and 28.4% in the older urban areas. All these figures, of course, indicate a considerable disparity between the educational standards of the newer and older towns. However, since there is a trend towards increasing


DISTRIBUTION OF POPULATION
IN ISRAEL
1948


DISTRIBUTION OF POPULATION
IN ISRAEL
1966

secondary school attendance in the newer towns and education is compulsory for children aged 5 – 14, the rates found in 1961 are no longer representative of the present situation. Presumably, the disparity in educational standards between the two population groups will accordingly grow smaller in the course of time (see below, paragraph 8a).

TABLE 10. Urban Jewish Population, by Number of Years of Schooling and Type of Urban Settlement (Old or New)
(absolute figures and percentages)

No. of years' schooling	Older urban settlements		New urban settlements	
	No.	%	No.	%
Total	812,410	100.0	106,400	100.0
0	86,770	10.8	40,060	23.4
1 – 4	41,470	6.1	20,275	11.8
5 – 8	102,860	30.5	66,840	38.4
9 – 10	170,195	18.1	15,600	10.8
11 – 12	164,020	17.6	23,275	8.4
13 and above	104,285	[illegible]	13,555	6.8
Unknown	6,160	0.7	3,760	0.8

Source: Central Bureau of Statistics.

3. EMPLOYMENT AND UNEMPLOYMENT

The occupational structure of the development areas is markedly different from that of the coastal strip, and there is also a considerable difference between the development towns and the big cities (see Tables 11 and 12). In the Northern and Southern districts a higher proportion of the labor force is employed in agriculture and building than in the coastal strip, while in the Jerusalem District there is a relatively high proportion employed in the services.

Although in the development towns a smaller share of the labor force works in industry than in the coastal strip, the proportion of industrial workers is constantly increasing while the proportion of farm workers is declining, while the share of building workers varies with the population increase and the state of investments. This situation may be expected to continue in the near future. Increased employment in farming depends today on marketing prospects for agricultural products and additional reserves of land and water which are already being utilized quite intensively. Agricultural employment is also being curtailed by rising farm labor productivity. Since commerce and banking tend to concentrate around centers of economic activity, mainly the Tel Aviv District, and additional employment potential in services is largely restricted to the present consumption areas, while transport and communications are bound up with and subordinated to other economic activities, it appears that industry was and remains the main branch of the economy that can be geographically regulated and directed.

TABLE 11. Employed Persons, by Economic Branch and District — 1963 Average (in percentages)

Economic branches	Israel, total	Jerusalem District	Northern District	Southern District	Haifa District	Central District	Tel Aviv District
Total (in thousands)	813.2	67.1	127.7	58.0	152.7	154.7	258.0
Total (percent)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture	14.3	(2.5)	36.6	32.2	7.2	23.3	(1.3)
Manufacturing, mining and quarrying	24.7	17.2	17.5	16.8	25.4	25.4	31.3
Building	10.1	11.2	13.7	10.8	9.2	8.3	9.1
Electricity	1.7	(1.3)	(0.7)	(1.6)	(2.3)	1.7	2.0
Commerce and finance	12.8	12.7	5.2	(6.2)	14.3	8.6	19.3
Transport and communications	7.0	(5.9)	(3.2)	(5.8)	(12.2)	5.6	7.0
Services:	29.4	49.3	23.1	26.6	29.4	27.1	29.4
Public and business services	22.0	39.9	15.3	20.1	22.9	20.3	21.7
Personal services and entertainment	7.4	9.3	7.8	6.5	6.5	6.8	7.7

Source: Manpower Surveys, 1963, Central Bureau of Statistics.

TABLE 12. Employed Persons by Economic Branch and District — 1965 Average (in percentages)

Economic branches	Israel, total	Jerusalem District	Northern District	Southern District	Haifa District	Central District	Tel Aviv District
Total (in thousands)	873.9	74.8	140.1	77.8	137.4	151.9	292.1
Total (percent)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture	12.4	(4.8)	30.2	25.3	7.1	18.6	(1.2)
Manufacturing, mining and quarrying	26.1	17.0	21.0	24.7	24.9	28.5	30.6
Building	8.7	9.0	11.2	12.2	8.3	7.3	7.6
Electricity and water	2.0	(0.9)	(1.8)	(2.3)	(2.5)	(1.5)	2.3
Commerce and finance	12.8	13.0	7.1	(5.3)	15.2	9.2	18.6
Transport and communications	6.8	6.9	3.8	(5.0)	11.1	5.9	6.6
Services:	31.2	48.4	26.9	25.2	30.9	28.0	33.1
Public and business services	23.2	39.2	18.4	18.5	24.3	20.6	24.9
Personal services and entertainment	8.0	9.2	8.5	6.8	6.6	7.4	8.2

Source: Manpower Surveys, 1965, Central Bureau of Statistics.

a. Agriculture

Agriculture is the main source of employment in the Northern and Southern districts for both the Jewish and the minority population, but its share in total employment, as well as in the gross national product, is constantly declining because of the limited possibilities for marketing the surpluses, which keep growing with rising productivity.

In 1963, 37% of all employed persons in the Northern District and 32% in the Southern District worked in agriculture; in 1966 the percentages were only 30% and 25%, respectively. The majority are self-employed farmers; most of the rest live in development towns and work in nearby villages. Most of the 12% of the labor force of the development towns who were employed in agriculture in 1963 were unskilled laborers who worked on a seasonal and highly unsteady basis.

The policy of the kibbutzim and moshavim to do without hired labor as far as possible of course reduces the scope of agricultural employment and may first of all hit the development towns.

b. Industry

Generally, industry tends to be located in the center of the country, where it enjoys various external advantages — more efficient services, a supply of highly skilled manpower, and proximity to sources of raw materials and the principal markets. Only part of the industry, such as mines and quarries, or agricultural processing industries, are naturally located in development areas.

The Government has given considerable attention to the development and encouragement of industry in the development zones. Government aid took the form of cheap credit, tax concessions, preparation of sites, development of the infrastructure, participation in vocational training and the like. Nevertheless, industry has not developed sufficiently, and the employment problems of the Southern and Northern districts have not been completely solved. The drawbacks of the development areas continued to deter potential investors in spite of the far-reaching incentives provided for enterprises established there.

Obviously, the disadvantages of the development zones for individual enterprises will decrease the more industry and trade develops in these areas and the more their population grows. Improved vocational training and education are also likely to raise the standard of local manpower. The enterprises so far established in the development towns are usually big enough to be able to supply their own serivces, which the local market is unable to provide. At times a single enterprise has been the main source of employment for an entire township, and the labor market in many development towns is still affected by employment fluctuations in one or two enterprises. This situation will resolve itself once the population of the towns grows and employment opportunities become more diversified.

In 1963, about 17% of all the persons employed in each of the development districts worked in industry. By 1966, industrial development had pushed the rate up to 25% in the Southern District and 21% in the Northern District.

In both these areas industry was second only to farming as a source of employment, while in Jerusalem the rate of persons employed in industry remained at the same level of 17% from 1963 until 1966.

Between 1963 and 1966 the number of people employed in industry grew by 18,000 in the development areas as against 9,000 in the coastal strip, mostly in the Tel Aviv District.

A comparison between industrial employment in the development areas and in the country as a whole shows that, in spite of the encouragement given to the development areas, their share in the total employment in industry is still only 27%, while the Tel Aviv District alone accounts for 40%. Tel Aviv concentrates around it the majority of industrial employees in practically all the main industries, except in mining, where 40% of the total employment is in the Southern District.

c. Services

The weight of services in total employment is relatively low in the Northern and Southern districts and relatively high in the Jerusalem Disrrict. About a quarter of all persons employed in the Northern and Southern districts work in services, as against about one-half in the Jerusalem District. Relatively more persons are employed in services along the coast than in the Northern and Southern districts, but fewer than in the Jerusalem District. Services play a major role in Jerusalem both because the City of Jerusalem accounts for about 90% of the population of the entire district, and because of its special status as the capital of the country, a center of religious and intellectual life, and a tourist attraction.

As the capital of the country, Jerusalem is the headquarters for national activities: in addition to Government offices and authorities, various national, religious and educational institutions are located there. However, although Jerusalem is the capital, a considerable portion of the national public services are located in Tel Aviv.

TABLE 13. Persons Employed in National Public Services in the Tel Aviv District, 1966

All employed persons	11,500
Government	4,500
National institutions	1,100
Trade unions and political parties	2,520
Education	1,000
Health	1,360
Welfare and amenities	970

Source: Yoram Peles, Employment in Public Services in the Tel Aviv District, Economic Planning Authority, October, 1966, p.3.

An investigation of the public services in the Tel Aviv District as at the beginning of 1966 shows that close to one-quarter of service personnel in this district were employed in nationwide services — about half of them in Government offices and national institutions. Only a minor portion — those employed in higher education and health services — were necessarily bound to the District.

Though academic education is not defined as a local service, most of the people receiving such education in Tel Aviv are residents of the District, so that this is its natural location. The same applies to national health services which are provided mainly in the form of hospitalization in institutions in Tel Aviv and the vicinity.

In the Northern and Southern districts services fulfill an exclusively local function, not counting the few who are engaged in the tourist industry.

d. Commerce and Finance

Between 1963 and 1966 the percentage of persons employed in commerce and finance in the development areas was lower than in the coastal districts: about 6 % of total employment in the Northern and Southern districts and 13 % in the Jerusalem District, as against 19 % in the Tel Aviv and 15 % in the Haifa District.

The Tel Aviv District provides most of the national commercial and financial services. The headquarters of the banks, the stock exchange and the insurance companies are located in Tel Aviv and most of the wholesale trade is conducted there. In 1963/64 and 1965/66 close to two-thirds of the sales of the entire wholesale trade of Israel were made in this District, which also accounted for 62 % of total employment in this branch and about 63 % of all wholesale firms.

The development areas had only a minor share in the wholesale trade, accounting for no more than 10 % of total sales.

TABLE 14. Employment and Turnover of the Wholesale Trade, by Districts, 1965/66
(percentages)

District	Employed persons	Turnover
Israel, total	18,397[1]	4,874.6[2]
Percent	100.0	100.0
Jerusalem District	4.7	3.3
Northern District	3.0	2.7
Haifa District	21.5	19.7
Central District	7.0	4.2
Tel Aviv District	60.9	65.3
Southern District	2.9	4.8

1) Number.
2) IL million

Source: Central Bureau of Statistics.

Wage scales in the wholesale trade in the Haifa and Tel Aviv District were also higher than in other areas. In 1963/64 annual earnings in the Haifa sub-district were IL 6,500 and in the Tel Aviv sub-district IL 6,300, as against IL 5,000 in the development areas.

This marked centralization of the wholesale trade is due to market conditions; the fact that commerce and banking should be centered in the main seats of economic activity is no more than natural.

e. Unemployment

Unemployment is the severest problem the development areas have had to contend with. Unemployment rates were particularly high in the Northern and Southern districts, because jobs could not be created fast enough to keep up with population growth.

The development areas were populated before there was an economic basis to support the newcomers, who went to these areas not because of their economic attractions, but as a result of a policy dictated by national interests. Much of the manpower sent to the Northern and Southern districts was initially employed in building and land reclamation, and it was only in the course of time that normal employment was created, though there was not enough of it. Considerable numbers were engaged in relief work and there were many unemployed.

Besides the inherent disadvantages of the development zones — their distance from marketing outlets and the small size of the settlements — the level of education and skill of the local manpower is generally lower and it is less suited for modern industrial work than the labor available in the coastal strip. Consequently, investors preferred to set up their projects along the coast, especially in the centers of economic activity around Tel Aviv and to some extent also in the Haifa area.

The incentives given to investors in the development areas were not sufficient to meet local employment needs, and the dispersal of economic activity lagged behind the dispersal of the population. Even during the period of economic prosperity between 1961 and 1964, when there was a manpower shortage in the more economically active areas, which were crying out for labor, even of the unskilled kind available in the development regions, these areas continued to suffer from severe unemployment. As the disparity in the employment rate of the different districts grew, the temptation to move to the coastal districts became stronger. In 1963 the average annual unemployment rate in the 21 development towns came to 13 % of the labor force, with another 10 % working on relief projects. In certain towns the unemployment rate was still higher. Here the labor force participation rate was lower than in other similar towns, probably because the inhabitants felt that there was no prospect of getting work and therefore did not apply. As a result of chronic unemployment, severe social cases dropped out of the labor force, while less severe cases migrated to the coastal area. This had a considerable impact on the dispersal of the population. Throughout 1963—1965 some 70 % of all unemployed and relief workers in the country were concentrated in the Northern and Southern districts, whose share in the labor force was only 32 %. Only in 1966 and 1967, with the growing economic recession, did unemployment in the coastal area rise more rapidly than in the development areas, though the latters share in unemployment still remained higher than their share in the labor force. Although this development may have slightly curbed internal migration to the coastal strip, it cannot be regarded as a proper solution for the unemployment problems of the development zones. (See also Chapter 2: Population and Employment.)

4. INVESTMENTS

The development zones received a smaller share of the gross investment[1] than of the population increment, as may be seen by comparing the distribution of investments and of the population increase among the various districts (see Table 15). In 1963, 52 % of the total population increase was absorbed by the development zones, while their share in gross annual investment was only 42 %. In 1963—1966, however, the trend was towards a better balance between the additional capital and the additional population sent to the development areas. This was due rather to the reduced portion of the population increase sent to the development areas — though the reduction was not the same in all districts — than to the increased proportion of investments allocated to them.

TABLE 15. Population Increase and Gross Investment,[1] by District, 1963–1966
(percentages)

District	1963		1964		1965		1966	
	Population increase	Total gross investment	Population increase	Total gross investment	Population increase	Total gross investment	Population increase	Total gross investment
	(thousands)	(IL.million)	(thousands)	(IL.million)	(thousands)	(IL.million)	(thousands)	(IL.million)
All districts	98.3	1964.7	85.5	2068.1	73.6	[illegible]	49.0	[illegible]
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Development areas, total	52.1	41.9	44.3	40.0	42.3	[illegible]	40.4	40.0
Jerusalem District	7.3	7.1	7.7	7.2	6.7	7.6	7.6	9.0
Northern District	19.3	14.6	16.7	23.4	16.8	[illegible]	15.5	10.9
Southern District	25.9	18.2	21.1	18.4	21.9	17.0	17.0	19.6
Coastal area, total	47.9	58.1	55.6	60.0	57.7	61.3	59.6	60.1
Haifa District	12.4	14.8	15.5	15.5	13.3	17.2	13.9	20.1
Central District	14.8	18.6	18.7	18.5	19.6	19.1	27.0	19.6
Tel Aviv District	19.6	24.7	21.6	26.6	24.3	[illegible]	[illegible]	[illegible]

1) Not including ships, aeroplanes, vehicles, equipment for building and inventory.

Examination of the investments by destination and district shows that half the total investment in industry, agriculture, electricity and communications went to the development zones, but only 36 % of the investment in commerce and services and 33 % of that in housing construction so that altogether only 40 % of the total investment between 1963 – 1966 was to the development areas as against 46 % of the total population increment.

During 1963 – 1966 the Jerusalem District on the average had a higher share in investment than it did in the population increment. In the Southern and Northern districts, however, the opposite was the case: their share in investment was smaller than in the population increase. The Southern District, particularly, took in 26 % of the population increase in 1963, but received only 18 % [illegible] the investments. The lag was gradually reduced towards 1966, but even then only 16.5 % of total investment went to this district, as against 17.6 % of the total population increase.

The share of the Haifa District in gross investments grew from 15 % in 1963 to 18 % in 1966, while its share in the population increment increased from 12.6 % to 13.9 %. In the Tel Aviv District, on the other hand, investments went down slightly, from 26.7 % in 1963 to 25.5 % of the total in 1966, while the District's share in the population increase advanced considerably, from 19.5 % in 1963 to 26.7 % in 1966. The share of the Central District in investments and in the population increment was about the same, except in 1966, when it received more population than investments.

5. STANDARD OF SERVICES AND FACILITIES

a. Education

The rapid growth of the pupil population during the period of mass immigration brought about an increased demand for teaching staff, mainly in the development areas and immigrant centers. In these areas the pupil population continued to grow fairly rapidly even after mass immigration came to an end, because of the higher birth rate among new immigrants than among older residents. As a result, there was a shortage of skilled teachers, mainly in immigrant areas, and unqualified teachers were therefore used as a temporary measure. Consequently, during the early years, teaching standards were inferior precisely among those sections of the population whose children required special care. In their educational achievements the children in the immigrant centers, particularly in the development areas, lagged far behind those of the more settled population.

In its efforts to train the required manpower as quickly as possible, the Ministry of Education opened training colleges for village teachers and offered loans and grants to teachers who undertook to take up posts in any place specified by the Ministry. It also initiated an intensive training program among unqualified teachers to enable them to qualify and raise their standards of knowledge and teaching ability. It also paid bonuses to teachers who undertook to work for several years in outlying areas and developing towns.

Because of the special composition and demographic characteristics of the population of the development areas, they also profited to a considerable extent from the schemes introduced by the Ministry of Education for the benefit of culturally deprived children in general to equalise their educational achievements with those of the better educated sections of the population. These schemes include: a) a long study day; b) an extended school year; c) grouping of children by educational standards for intensified teaching of Hebrew, arithmetic and English; d) courses to prepare children in the higher grades of elementary school for secondary education; and e) auxiliary lessons for selected groups of backward pupils.

The Government also provided subsidies to help impoverished local authorities to maintain their school system. Government participation in the maintenance of schools and kindergartens was fixed in keeping with the economic position and financial capacity of each local council.

The standard of secondary education in the development areas was also lower than in the other parts of the country, and the attendance rates were extremely low. To foster secondary education in these areas and among new immigrants generally the Ministry of Education set up a IL 100 million fund financed by foreign donors, the National Lottery and the Ministries of Education and Housing, for the establishment of 65 comprehensive schools in development and immigrant towns. Reduction in tuition fees were granted to pupils in these areas and since 1966 they have been completely exempt.

By now the central parts of the country have an ample supply of qualified teachers and there is even a certain surplus. In the Northern and Southern districts, however, there still is a shortage and in some immigrant areas girl soldiers still do the teaching, since other teachers are not prepared to work there. The surplus in the central areas makes it possible to divert suitably qualified teachers to the development areas, and with the rapid construction of properly equipped school buildings it may be expected that teaching standards will improve in the near future and that attendance rates in immigrant areas will rise.

b. Health

Generally it may be said that the standard of medical services in the Northern and Southern districts is much lower than the accepted standard in the center of the country. Thus, for instance, the opportunities of receiving the services of specialists in development towns and outlying rural areas are limited. The Jerusalem District is an exception in this respect, since there are medical teaching and research institutions in the city. There is no reliable criterion of the differences in medical services between the various districts. The statistical bias of the various indices is due partly to the different procedures by which medical services are supplied, and partly to the fact that specialists' services for the entire country are provided at the major medical centers. The number of persons per doctor may, however, serve as a rough index to highlight the differences between one district and another.

In 1963 there were 651 persons per doctor in the Northern District and 627 in the Southern District, as against 399 in the Tel Aviv and 396 in the Haifa District.

TABLE 15. Number of Persons per Physician, by District and by Urban and Rural Areas, 1963

District	Average number per physician	Average number per physician in urban areas	Average number per physician in rural areas
Israel, total	418	317	1,821
Jerusalem District	375	343	1,371
Northern District	651	402	1,811
Haifa District	396	366	796
Central District	473	404	1,226
Tel Aviv District	399	399	—
Southern District	627	407	1,369

Source: Manpower Planning Authority, Physicians, [illegible], 1964, p.35.

c. Municipal Services

The scope and quality of the services provided by the local authorities depend on the financial resources at their disposal, which consist of tax revenues and Government allocations. There are considerable differences between the tax revenues of the various authorities. The principal taxes are levied on property and businesses, and there are also various fees and charges. The smaller the wealth of the inhabitants living in a given local council area and the less business activity is carried on within it, the less money the council can raise. Government allocations vary from one place to another and are intended to decrease the gap between the authorities' income and their needs, mainly in the field of welfare and education, but it is not sufficient to equalise the revenues of the various councils, so that the standard of municipal services varies.

For the purposes of this allocation, the Ministry of the Interior has classified the local authorities into 10 categories, those with less than 500 inhabitants being included in category IX or X. In 1966 the annual grant ranged from IL.5 per capita for Type I authorities to IL.75 per capita for those of Type X. The average per capita allocation in the different districts in 1966 is shown below.

In addition to these allocations, the Government grants subsidies for various services, mainly for education, as well as loans for urban development through the Ministry of the Interior.

District	Annual Per Capita Allocation (in IL)
Israel, total	23.60
1. Development areas, total	34.05
Jerusalem District	13.97
Northern District	44.23
Southern District	60.71
2. Coastal area, total	18.18
Central District	20.45
Tel Aviv District	8.87
Haifa District	11.40

Source: Ministry of Interior.

INCENTIVES TO ECONOMIC ACTIVITY

Since private initiative tends to concentrate near existing centers of economic activity, the development areas, with their small towns and villages cut off from the major population centers, stand little chance of development if left to themselves. Public and Government initiative is therefore required.

The Government has adopted two main types of incentives to attract people and resources to the development zones: direct allocation of Government funds, and economic incentives for investors and residents.

a. Public Building

Public construction is an important means of creating jobs in the development areas, and is also likely to attract residents from the coastal area provided the terms offered are interesting enough.

Public building in the development areas is of three main types: a) housing construction; b) construction of public service institutions; c) urban development — sewerage, street lighting, infrastructure for industry and commerce, etc.

About 50 % of the total amount spent on public building in 1963 — 1966 was invested in the development areas — slightly more than these areas' share in the population increment, which was only 46 %. However, the share of the development areas in total building investments was lower, amounting to only 33 % (see Table 18), because there was little private housing investment in these areas.

Accordingly during 1963 — 1966 the share of the development zones in total public and private construction tended to increase slightly, while their share in the population increase fell. In 1963 the share of the development zones in total construction was 32 %, as against 53 % of the population increase, whereas in 1966 they received 34 % of total housing investments, although their share in the population increase was 40%.

These data show that the priority given to the development areas in public building was not enough to offset the effect of the low level of private housing construction in these areas during 1963–1966. Throughout, the building stock in relation to the population increase grew more rapidly in the coastal districts.

TABLE 17. Share of Public Building in Total Construction,¹) by District and Purpose, 1960–1966 (percentages)

District	1960–1962²) Share of public building		1963 Share of public building		1964 Share of public building		1965 Share of public building		1966 Share of public building	
	all purposes	housing	all purposes	housing	all purposes	housing	all purposes	housing	all purposes	housing
All Districts	37.3	34.0	41.1	48.2	37.8	40.4	38.0	45.6	33.7	39.6
Jerusalem District	45.0	50.3	53.8	53.7	45.1	46.9	46.6	49.3	44.7	45.6
Northern District	40.3	45.1	39.1	48.4	30.3	47.0	43.9	53.6	39.2	40.3
Haifa District	28.6	40.9	36.8	43.0	33.0	41.1	36.0	45.5	38.6	37.3
Central District	31.7	43.1	38.9	43.8	33.3	41.3	38.3	34.8	30.3	47.3
Tel Aviv District	18.0	16.2	20.8	23.1	27.0	27.8	23.1	26.4	20.3	15.8
Southern District	80.9	81.6	73.4	86.1	67.6	82.0	80.3	80.4	64.3	78.6

1) By average area of building starts and completions.
2) Annual average.

Source: Central Bureau of Statistics, Building in Israel, 1960–1966.

From Table 17 it may be seen that in 1963–66, the public sector played a particularly prominent role in the Southern District and accounted for 82% of the total housing construction area in that District. At the same time its share both in housing and other construction in the District constantly declined.

In public construction, as in many other fields, the Northern District was the least fortunate of the development areas. Its share in public housing did not exceed its share in the population increase throughout 1963–1966. On the other hand, the Jerusalem District's share in public construction advanced from 9.5% in 1963 to 13.5% in 1966, and on the average was higher than its share in the population increment. On the average, the share of the Southern District in public building during the period did not fall behind its share in the population increment either.

Examination of public housing prices and terms shows that the conditions offered by the Amidar Housing Company in the development areas are not much different from those offered in the coastal area. In the center of the country a new immigrant or any person entitled to buy an apartment from Amidar is required to pay about 20% of the price in cash receiving a 20–25-year non-linked mortgage at 6% interest for the rest. In development areas receiving the highest priority, purchasers are required to pay only 10–12% in cash and for the rest are given 30-year non-linked mortgages, likewise at 6% interest.

TABLE 13. Population Increase, and Housing Investment by Source and District, 1963 – 1966 (percentages)

District	1963			1964			1965			1966			Total 1963 – 1966		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total, absolute numbers¹	38.2	782.7	574.0	58.5	1068.0	511.8	72.8	870.3	383.5	58.9	770.1	381.6	380.6	5,076.3	1,880.0
Israel, total (percentages)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Development areas, total	50.1	35.1	48.3	44.8	33.3	48.0	40.3	38.4	48.8	65.4	34.8	53.1	48.6	38.8	50.3
Jerusalem District	7.0	6.6	6.6	7.7	7.6	8.8	8.7	8.0	8.7	7.4	9.0	10.6	7.0	8.2	9.0
Northern District	14.2	10.5	11.9	16.7	11.7	15.9	16.8	11.6	18.4	19.8	10.8	16.6	18.6	11.9	14.0
Southern District	24.8	19.6	30.3	21.3	15.0	28.1	33.0	18.9	25.7	37.8	13.8	30.6	25.8	15.9	29.1
Coastal area, total	47.8	67.0	51.7	65.5	67.0	51.2	67.7	61.6	52.3	34.6	65.5	46.8	56.0	67.0	54.6
Haifa District	13.8	13.1	15.4	13.5	16.0	10.3	10.8	13.8	10.2	10.8	11.9	8.6	10.7	16.1	13.6
Central District	14.8	20.0	17.0	18.7	18.9	17.4	18.0	20.0	21.2	19.0	20.8	19.8	17.1	18.0	20.0
Tel Aviv District	18.5	34.0	21.8	32.8	32.0	15.6	26.3	34.5	18.8	38.7	33.1	18.0	30.0	34.0	20.7

1) Population in thousands; investment in IL millions at current prices.
2) At 1966 prices

Source: Bank of Israel; Economic Planning Authority.

In rentals, too, the development areas do not enjoy a significant advantage. The difference between the rent payable in the highest and lowest priority areas is IL 23 per month for a floor space of 91 sq. m., and for smaller apartments, though the relative difference is bigger, the real difference is smaller still.

It appears, therefore, that the financial terms offered to tenants and purchasers in the development zones were not good enough to attract population from the coastal strip. It should be added that since 1965, as prices of privately built houses in the coastal region went down, the difference between public housing in development areas and private housing in the coastal strip has also been whittled down.

b. The Law for the Encouragement of Capital Investments

The Law for the Encouragement of Capital Investments was passed by the Knesset in 1950. Since then it has undergone numerous adjustments and amendments in line with economic developments and needs, but the objects of the law, one of which is to encourage investments in the development areas, have not changed.

Some of the amendments to the Law were directly concerned with investments in the development areas. According to the amendment passed in 1955, direct assistance was given as from that year to finance investment in the preparation of industrial sites, and various tax exemptions were granted. The criteria for conferring the status of an "approved enterprise" were the extent to which the investment contributed toward improving the balance of payments, or the number of jobs it provided — mainly in development areas — or whether its production was defined as essential.

In 1959 the law was again amended and the advantages given to approved enterprises were increased. In a further amendment, passed in 1963, stress was laid on greater selectivity in approving new enterprises. To qualify for "approved" status, an enterprise had to export at least 50% of its output or be set up in a development area. Enlargements of existing enterprises also qualified if they were to the extent of at least 50% of the existing enterprise, provided that half the added output was exported; in the development areas the enlargement only had to be 33% of the existing enterprise, without any duty to export.[1]

c. Loans of the Industrial Development Bank

Cheap credit is one of the major means of encouraging investments in development areas. The Industrial Development Bank is the main instrument for granting such credit. From the distribution of its loans by districts it is clear that the development areas have received considerable priority (see Table 19).

As in the case of public building, so also in the allocation of credit there has been a trend in recent years to increase the share of the development areas compared with the coastal regions. Between 1962 and 1966 the share of the development areas advanced from 36 % to 69 %. The Southern District received the bulk of the loans granted to these areas.

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[1] The Law was again amended in 1967; see below.

TABLE 19. Loans Approved by the Industrial Development Bank, by District, 1962—1966
(in IL million)

District	1962		1963		1964		1965		1966	
	IL million	percent	IL million	percent	IL million	percent	IL million	percent	IL million	percent
Israel, total	105.6	100.0	64.3	100.0	130.7	100.0	98.3	100.0	98.5	100.0
Development areas, total	38.1	36.1	31.1	48.4	68.0	52.0	39.1	39.8	68.1	69.1
Jerusalem District	1.4	1.3	3.0	4.7	7.6	5.8	4.4	4.5	1.9	1.9
Northern District	19.1	18.1	7.4	11.5	23.7	18.1	20.0	20.3	32.0	32.5
Southern District	17.6	16.7	20.7	32.2	36.7	28.1	14.7	15.0	34.2	34.7
Coastal area, total	67.5	63.9	33.2	51.6	62.7	48.0	59.2	60.2	30.4	30.9
Haifa District	41.8	39.5	11.4	17.7	19.4	14.8	28.0	28.4	9.6	9.7
Central District	17.8	16.9	9.5	14.8	25.5	19.6	20.8	21.2	13.7	14.0
Tel Aviv District	7.9	7.5	12.3	19.1	17.8	13.6	10.4	10.6	7.1	7.2

Source: Data of the Industrial Development Bank.

d. Loans and Allocations from the National Lottery

The National Lottery is a major source for financing of investments of local authorities in schools and hospitals. According to the existing distribution, most of the Lottery funds are allocated to local authorities in the coastal strip. Until recently clear preference was given to the center of the country, especially the major towns, while the development areas received a smaller proportion of these allocations and loans than would have been due to them according to their share in the population. During 1960—1963 the development districts received only 21.5 % of the funds loaned or allocated by the Lottery, while the coastal areas received 78.5 %. This situation has been remedied to some extent in recent years. In 1964/65 the development districts received about 40 % of the total allocations for the construction of elementary schools, as against about 30 % in 1963/64 and 24 % in 1962. Loans to the local authorities' educational institutions are made on the joint recommendation of the Ministries of Education and Housing; and all local authorities may apply.

e. Concessions and Incentives to Residents of Development Areas

Residents in the development areas and people moving into them from the center of the country receive various concessions, partly regulated by law, including:

a) Income tax concessions for residents of certain towns, provided they live at least one year in the same town. Full exemption is granted if the monthly income does not exceed a certain sum; if the income is above this level, exemption is granted from part of the tax liability according to the ratio between total income and the sum exempted from tax.

b) Housing facilities for employees in an enterprise transferred to a development area from an area of lower priority who move together with the enterprise, by transfer of mortgages, allocation of a similar apartment to the one occupied previously, etc.

c) Severance pay to workers who move to development areas. The Severance Pay Law provides that workers resigning from their jobs in order to move from a place outside the development areas to a place in a development area are entitled to severance pay.

B. REGIONAL DISTRIBUTION PLAN

The need for regional planning in Israel does not arise only from economic causes, but also from political and security considerations, which demand a regional distribution of the population different from that which would have come about naturally.

In setting the targets for the dispersal of the population, the major importance of settling the development zones and the difficulties involved in implementing this policy were both taken into account. The population increase in 1968—1971 is expected to be about 338,000. During this period, 130,000 new immigrants are expected, as well. In the past, it was mainly immigrants who were sent to the development areas since it is not easy to attract people from the developed areas. It is, therefore, much more difficult to carry out the policy of population dispersal now than it was during the periods of mass immigration. Nevertheless, the far-reaching measures decided upon by the Government to implement this policy should make it possible to achieve the target of settling another 175,000 people in the development areas between 1968—1971. This is about half of the total population growth expected for the whole country. In this manner, there will be a gradual increase in the percentage of development area population as compared with total population, reaching 34% in 971, as opposed to 32% in 1967.[1]

It may be expected that, by the end of 1978, development area will reach about 36% of total population.

1. POPULATION DISPERSAL TARGETS IN THE DEVELOPMENT AREAS

In the first stage steps must be taken to remedy the situation created by the existence of small development towns which are economically,

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1) According to a temporary estimate for 1967.

TABLE 20. Population by District,[1] End of 1966, 1971, 1978

District	1966		1971		1978	
	thousands	percent	thousands	percent	thousands	percent
Total	2,657.4	100.0	3,112.9	100.0	3,600.0	100.0
Development areas, total	810.2	30.5	1,061.5	34.1	1,281.6	35.6
Jerusalem District	225.6	8.5	336.2[2]	10.8	396.0	11.0
Northern District	364.2	13.7	448.3	14.4	540.0	15.0
Southern District	220.4	8.3	277.0	8.9	345.6	9.6
Coastal area, total	1,847.3	69.5	2,051.4	65.9	2,318.4	64.4
Haifa District	488.5	18.4	560.3	18.0	644.4	17.9
Central District	548.1	20.6	619.5	19.9	709.2	19.7
Tel Aviv District	810.7	30.5	871.6	28.0	964.8	26.8

1) The population of Acre and Naharia are included in the Haifa District, and the population of Ashdod and Ashkelon in the Central District.

2) Including East Jerusalem.

socially and culturally underdeveloped. Instead of setting up new towns, the Government has therefore decided to concentrate on strengthening the existing ones, so that they may reach the minimum size necessary to supply their inhabitants with adequate services. It is impossible to provide secondary or vocational education at a reasonable per capita cost for towns with a population of less than 10,000. This size is also the lower limit for providing adequate health services (with specialists in regular attendance at the clinics).

The need to enlarge existing towns instead of setting up new ones is clear in the light of the limited population increment that can be attracted to the development zones and the limited economic resources that can and should be devoted to the purpose. Another reason is that the enlargement of the existing development towns may be expected to lead to more extensive and diversified employment. As the local market grows, job opportunities will increase and the production of goods and services for local consumption will become more worthwhile.

It should be stressed that the minimum target for these small towns is only an interim target, to prevent the small size of the local population from holding up growth and development. In the long range the population of the development towns should be much bigger, so as to enable them to develop into socially and economically consolidated cities which may become centers of attraction for new immigrants and old-timers.

In addition to speeding up the growth of the smaller towns, efforts should also be made to help those development towns that have already passed the 10,000 limit, so that they may continue their growth, though at a somewhat slower pace. This is essential because of the favorable effect of constant growth on the economic and social climate of a town. Priority should be given to those towns which are further removed from existing urban centers, so that new self-supporting urban centers may develop there.

2. TARGETS FOR POPULATION DISPERSAL IN THE COASTAL AREA

To avoid intensification of the deleterious effects of congestion, the distribution of the population in the coastal strip must be properly planned according to regional targets. In particular, the growth of the Tel Aviv area should be slowed down, since overcrowding in this area causes much economic harm.

Limits should also be set to the population increase in villages which are threatened by urbanization in the course of time. In the past, as a result of the building boom, land prices in the towns soared and residential quarters were therefore built on relatively cheap farm land in agricultural areas, so that many agricultural settlements began to spread out. Public housing institutions also contributed to this development, which, if it continues, may swallow up those agricultural areas that still remain between the new neighborhoods and the existing urban centers.

The aims of Government policy are that the population increment of the coastal region should settle in a number of urban centers, like Ashdod and Natanya, which are build on sand dunes that are not fit for agriculture. Most of these lands, in addition to being uncultivatable, form a continuous stretch and are publicly owned, so that economical development is possible.

Implementation of the regional population dispersal program requires a consistent and well-coordinated attitude on the part of all Government offices and authorities, with comprehensive priority for the development areas in accordance with Government decisions.

3. MEANS OF IMPLEMENTATION

a. Economic Means

The Government has decided to increase the incentives given to individuals and investors in the development areas and to divert a higher percentage of public and Government resources to speed up the development of these areas.

On 12 April 1967 the Knesset passed an amendment to the Law for the Encouragement of Capital Investments, to increase the benefits conferred on approved enterprises, especially in development areas. The amendment defined the boundaries of the development areas (see map) and divided them into two categories by order of priority.

Under the amendment, approved enterprises are entitled to a grant for part of the investment in fixed assets in addition to the customary tax concessions. The amount of the grant for enterprises set up until June 1972 was fixed, according to the type of assets and the priority of the area in question, as a percentage of the value of the investment, as follows:

Type of asset	Development zone I	Development zone II	Other areas
Machinery and equipment	33.3%	25%	20%
Buildings and land development	20%	15%	10%

The status of approved enterprise is generally conferred only on enterprises set up in Development Zones I and II and to enterprises in other areas which export at least 50% of their output. Only in exceptional cases – for security, technological or economic reasons – is this status also conferred on enterprises located outside the development areas.

In addition to this grant, an approved enterprise is entitled to the following concessions and benefits:

1. Tax Concessions

a. Exemption from customs duties, purchase tax and other indirect taxes on goods and equipment required for the establishment of the enterprise.

b. Income tax exemption. An approved enterprise pays only corporation tax at the rate of 28% of its profits for a period of five years, and no income tax. Dividends paid out of profits during this period are also exempt from income tax.

2. Transfer of Profits Abroad

Investors are assured ot the right to withdraw capital and profits of an approved enterprise and transfer them abroad in the same currency as that in which the original investment was made.

3. Loans for Erection of Plant

The Government will grant loans to approved enterprises at the following percentages of the investment in fixed assets:

	Development zone I	Development zone II	Other areas
Loans on fixed assets	55	50	45
Annual rate of interest	6.5	8	10
Total of loans and grants as percentage of total investment in fixed assets	80	70	60

4. Reductions in Real Estate Prices

Investors will be allocated land and structures on easy terms of lease. They will be offered industrial buildings set up by the Government in the development areas. The annual rental for standard buildings will be IL15–21 per sq. m., according to the priority of the area in question. Non-standard buildings set up specially to suit the investor's requirements will be leased at 10–12% of their cost. A three years' option will be given for the purchase of these structures.

5. Loans for Working Capital

The Government will grant loans of up to 50% of their working capital requirements to enterprises in Zone I and up to 40% in Zone II, at an annual interest rate of 9%. The Government will also supply the entire working capital required to finance export production, at an annual interest rate of 6%, regardless of where the enterprise is located.

6. Infrastructure

The Government will at its own expense develop the grounds, lay approach roads, connect the plant with the electricity grid and water supply, and provide sewage canals.

7. Priority in Acceptance of Bids for Government and Public Contracts

Government offices and companies will try to buy their requirements from enterprises in development areas while adhering to certain rules of public contracts and fair competition.

8. Participation in Workers' Training Costs

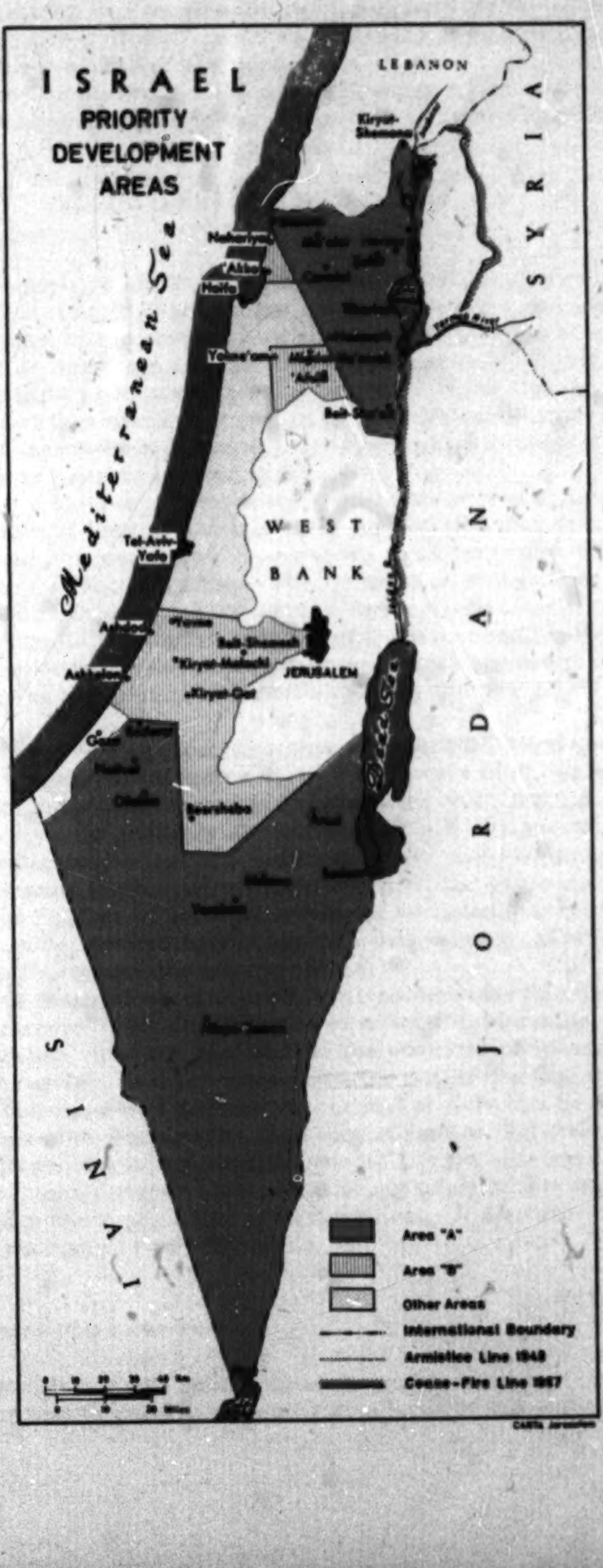
a. The Ministry of Labor will assist in the training of workers in the plant by a grant of IL 250 – 1,000 per worker according to the type of industry and location of the enterprise.

b. The Ministry of Labor will at its own expense conduct special courses at its training centers to train workers for certain enterprises and will also train workers in those trades in which there is a shortage in the area without reference to any particular enterprise.

c. The Government will assist in the training of apprentices in and outside the plant.

In addition, all approved industrial plants are entitled to deduct accelerated depreciation on buildings and equipment from 1 January 1967 until 31 December 1969. On buildings and equipment produced in Israel they are entitled to calculate depreciation at four times the ordinary rate and on imported equipment at twice the ordinary rate for the first two years.

Enterprises transferring from other areas to development areas will receive a transfer bonus of up to IL1,000 for every job transferred to Zone I, and up to IL500 for every job transferred to Zone II, to make up for the extra expenditure caused by the transfer.


ISRAEL
PRIORITY DEVELOPMENT AREAS
LEBANON
SYRIA
Kiryat-Shemona
Nahariya
'Akko
Haifa
Yarmuk River
Yoqne'am
'Afula
Beit-She'an
Mediterranean Sea
Tel-Aviv-Yafo
WEST BANK
Beit-Shemesh
Kiryat-Malachi
Kiryat-Gat
JERUSALEM
Ashkelon
Gaza
Beersheba
Dead Sea
Yeruham
JORDAN
SINAI
Area "A"
Area "B"
Other Areas
International Boundary
Armistice Line 1949
Cease-Fire Line 1967
0 10 20 30 40 Km
0 10 20 Miles

CARTA, Jerusalem

Likewise, assistance will be given in providing housing for workers so transferred or for essential staff, such as engineers or mechanics who are forced to change their places of residence.

The Ministry of Commerce and Industry will ensure that well-developed industrial sites and workshop buildings are set up in the development areas.

b. Transfer of Institutions from Coastal Area

The Cabinet Committee for Population Dispersal will examine in detail the possibility of locating in development areas institutions and enterprises under the jurisdiction of the various Ministries. The location of new institutions, such as hospitals and institutes of research and higher education, in any part of the country requires the prior approval of the Committee. The Committee will also take steps to transfer to the development areas all executive units of institutions and enterprises operating in these areas, most of which are at present located in Tel Aviv.

Every Ministry will have to inform the Committee of any plan it may have for the location of institutions under its jurisdiction that serve regional or national purposes, and if necessary the Committee will be authorized to object to such location. The Committee will further approach other public institutions, such as the Jewish Agency, the General Federation of Labor, and economic institutions, and urge them to open branch offices in and transfer units to the development areas. This applies mainly to
41 Jerusalem, which as the capital of Israel should be the seat of all national services.

In Jerusalem there are certain obstacles to industrial development. Land is scarce, the cost of infrastructure is relatively high, water is expensive, and the city has few auxiliary industries and business services. Moreover, many types of industry are not compatible with the character of the city as a religious, academic, administrative and tourist center. However, in reviewing the employment structure of the various districts, we noted the large number of persons employed in national services in the Tel Aviv District. Accordingly it appears that many institutions might well be moved to Jerusalem and other regions.

The transfer of institutions of course involves considerable outlays, especially investments in the construction of offices and housing. It should be stressed, however, that the real cost to the economy of transferring institutions to Jerusalem is much lower than the out-of-pocket expenses involved, since buildings that become vacant in Tel Aviv can be otherwise utilized. If we take into account the high cost of land in Tel Aviv, the difficulties due to overcrowding, and the possibility that the services in question might become cheaper as a result of not being in Tel Aviv, since many of their consumers are other public services, it appears that the real cost to the economy is smaller still.

c. Housing and Construction

To take in immigrants and residents at the rates suggested in the development plan and to raise the housing standards of the existing population in the development areas, public building must be stepped up considerably. Accordingly the Government has decided on the following:

1) At least 60% of housing construction for immigrants shall be carried out in the development areas.

2) The Ministry of Housing shall expand building activities in the development areas in order to provide housing for all old-timers, young couples, teachers and doctors working there, as well as for young couples whose parents are new immigrants living in development towns. The Ministry should further take steps to improve the housing conditions of large families in these areas.

3) The Ministry of Housing shall work out a detailed proposal to improve building standards and housing conditions of new immigrants, young couples and old-timers in development areas, for both rented and purchased premises. The differential between public housing conditions in development areas and in the coastal regions, both for new immigrants and old-timers, should be considerably increased.

4) Under the various slum clearance schemes, special bonuses and advantages in alternative housing should be given to those who move to development areas.

All these steps are likely to enhance the attraction of the development areas for the inhabitants of the coastal strip and reduce the attraction of the coastal strip for residents of the development areas. It should be mentioned that housing and other public construction is also a major source of employment. As more of it is diverted to development areas, the national distribution of employment possibilities is likely to improve.

d. Improving Educational Standard

Improving the educational standards of the development areas and raising them as far as possible to the accepted standards in the older cities is a primary condition for their economic and cultural advancement and the proper integration of the new immigrants settled there. It is also essential in order to attract old-timers to these areas. The Government has therefore decided to give high priority to the advancement of education in these areas and to allocate the maximum possible resources for this purpose.

e. Health and Services

The considerable disparity between the standard of services in the coastal areas and the development zones has been a major cause of migration to the coast, while counteracting migration in the opposite direction. This applies especially to those services which may sometimes be of decisive importance to the individual. To raise the standard of these services in the development areas the Government has resolved as follows:

1) The Ministry of Health shall give priority to the development areas in the establishment of hospitals, clinics and other health services.

2) The Ministry of Health shall make provision for adequate services in the development areas, which should as far as possible meet the standards attained in other parts of the country.

3) The Ministry of the Interior shall take growth requirements into account in making grants and allocations to development towns.

4) The Ministry of Transport shall continue to ensure adequate and sufficiently frequent public transport to development towns, and improve roads in the development areas.

5) The Ministry of Posts shall give priority to the development areas in expanding postal and telephone services.

f. Vocational Training

So far, most of the development towns have suffered from a shortage of skilled and technically trained manpower. To raise the standard of the available manpower in these areas, the Government has therefore decided that the Ministry of Labor should continue to expand its activities there. Specifically it was resolved that the Ministry shall:

1) Expand its central vocational training network and enable all interested parties to make use of the training.

2) Make sure that the cost of workers' training for enterprises should not exceed the customary rates in the rest of the country;

3) Continue the basic training of both the chief and the secondary breadwinner during the first year after immigration;

4) Encourage participation in vocational training programs by increasing the maintenance pay of trainees in development areas;

5) Expand and foster various apprenticeship schemes.

g. Physical Planning

Various steps are required in the field of physical planning to implement the population dispersal policy. The Government has accordingly decided to freeze the sale of land owned by the Israel Lands Authority in the coastal strip, except in vital cases approved by the Minister of Agriculture. The Government also submitted a Planning and Building law, which was passed by the Knesset on 14 July 1965. The sale of all lands in the coastal plain, mainly in the area between Acre in the north and Yavneh in the south, has thus been frozen, except in Ashdod and Ashkelon and the industrial zones of Yahud, Or Yehuda and Acre, which were exempted by the Minister of Agriculture.

The Building and Planning Law provides for the establishment of a National Building and Planning Council to prepare a national outline plan to be given legal force by the Government. It further provides that district outline plans should be drawn up within five years of the passage of the Law, that is, by the beginning of 1971. Every district will have a District Planning Commission with a local commission for every local planning area. The national outline plan should determine the general plan for every area in the country. The outline plan should specify, inter alia:

1) The destination and use of lands, the agricultural destination of lands suitable for this purpose being preserved;

2) **Industrial zones and mining areas;**
3) **The trunk road network, power stations, etc.;**
4) **Regulations on recreation, afforestation and soil conservation areas;**
5) **Locations of public utilities which are of national importance;**
6) **Forecast of changes in the distribution of the population, stages of development, and the phasing, size and location of towns and villages.**

According to the decision of the Cabinet Committee for Population Dispersal, every local outline plan that will be submitted for approval to the District Commisions, must include a detailed calculation of the demographic absorption capacity of the plan and must correspond with the target laid down for the town or village concerned in the national plan.

CHAPTER NINE: AGRICULTURE

A. DEVELOPMENT OF AGRICULTURE IN THE PAST

1. INTRODUCTION

For many years, the development of agriculture was given the highest priority in the economic policies of the Government and other public bodies. As a result, it may have received greater attention than was justified by its share in the economy, and decision-making processes are still affected by political and social attitudes to agriculture which outweigh purely economic considerations.

From the economic point of view, agriculture occupies a fundamental position as the producer of food, which is, of course, the most important commodity for the maintenance of the population. There have been different opinions about the degree of autarky to which Israel should aspire, but there is a certain minimum supply of food which any country must produce in order to assure its citizens of regular supplies at reasonable prices. This is the task of agriculture. At the same time economic considerations have often been regarded as less important than other aspects.

Agricultural development was a factor of primary political importance in the process of Jewish settlement in this country; the creation of villages by tillers of the soil was vitally important for the physical settlement and population of the land. Furthermore, towns were, naturally, set up mostly in the interior, while villages constitute a belt along the borders, the security importance of which is self-evident.

From the social point of view, Zionism idealized farming, because its direct links to nature and the soil and the physical labor involved in farming made it a sound basis for the "pyramid" of a healthy and productive society, through which a people long characterized by wanderings and homelessness could achieve stability. Furthermore, the socialist theories that accompanied the development of Zionism found in agriculture a suitable field for the realization of their ideals. The ideology of national land ownership, public ownership of the means of production, cooperation, personal labor without exploitation of others, and other similar theories, were expressed in the creation of collective villages (kibbutzim), and cooperative ones (moshavim), which practise the principles of socialist belief in the production processes and also in their consumption patterns. All this created the feeling that agriculture was not only a field of economic activity, but also a way of life with important values of its own.

From the very beginnings Jewish farming in modern Palestine had an organized character, even though it originated with the private initiative

TABLE 1. Agricultural Development — Basic Data, 1949-1967

	1949	1954	1959	1964	1967	Indices of expansion				
						1954/1949	1959/1954	1964/1959	1967/1964	1967/1949
Output* (IL million, 1966 prices)	274.2	586.5	1012.2	1407.9	1607.0	213.9	172.6	139.1	114.1	586.1
Exports** ($ million, current prices)	18.0	35.8	58.1	66.7	106.0	198.9	162.3	114.8	158.9	588.9
Employment ('000)**	58.0	95.0	120.0	119.0	110.0	163.8	126.3	99.1	92.4	189.7
Stock of capital† (IL million, 1966 prices):										
In agriculture	772.1	1556.1	1978.0	2791.0	3145.4	149.7	1710	141.1	112.7	407.4
In agriculture and irrigation ††	975.3	1609.1	2658.0	3861.8	4394.0	165.0	1652	145.3	113.8	450.5
Output per work (IL '000, 1966 prices)	4.7	6.2	8.4	11.8	14.6	130.4	136.6	140.3	123.5	308.9
Capital stock per worker (IL'000, 1966 prices):										
In agriculture	13.3	12.2	16.5	23.5	28.6	91.7	1352	142.4	121.7	215.0
In agriculture and irrigation ††	16.8	16.9	22.2	32.5	39.9	100.6	131.4	146.4	122.8	237.5
Capital/output ratio:										
In agriculture	2.82	1.97	1.95	1.98	1.96					
In agriculture and irrigation ††	3.56	2.74	2.63	2.74	2.73					

*Current output (excl. output of agricultural capital goods but not livestock).

**Calendar years

†On January 1

††Includes 80% of stock of capital in water supply, in accordance with agriculture's share in water consumption.

Sources: Output — calculated from data of Central Bureau of Statistics.
Exports — Central Bureau of Statistics: Israel's Foreign Trade, 1966.
Employment — Estimates of Bank of Israel.
Capital Stock — Economic Planning Authority, from figures supplied by Dr. E. L. Gaathon.

of the moshava (private-farm village) farmers which did not enjoy private or public support until later. Agricultural settlement continued as an institutionalized process financed by public funds. Before 1948 it was generally the work of young halutzim (pioneers), motivated by the desire to settle the land, and organized mostly in groups under political roof organizations. After the establishment of the State, most of the settlers were new immigrants, with a different attitude to farming, who were organized into settlement groups by the Jewish Agency and the settlement movements. Settlement was the responsibility of the Zionist Organization and its institutions — the Jewish National Fund, the Keren Hayesod and the Jewish Agency — who bought the land as national property, prepared it and leased it to settlers, established settlements, provided them with the essential means of production, and gave them vocational, economic and social training to the point where they could carry on on their own.

This process of settlement determined the "federative" character which still distinguishes Israeli agriculture from other sectors of the economy here, and from farming in most other countries of the world, where agriculture is usually characterized by individualism. Because of this, agriculture in Israel is more readily subject to planning than other branches of the economy.

2. SUMMARY OF THE DEVELOPMENT 1949—1967 [1]

When the State of Israel was established, it had 150 kibbutzim, 110 moshavim, and 45 moshavot and other farm settlements, with a total rural population of 100,000, about half of which lived in kubbutzim, one-fourth in moshavim, and one-fourth in other types of village. The most common kind of farm was of the "organic mixed" type — intensive farms, each on a small piece of land, mostly under irrigation, well equipped and based on their own labor. They operated various branches of farming, crops and livestock, complementing each other, according to conditions in each area, in order to supply balanced employment and a reasonable income. In addition to the mixed farms, there were monocultural farms in the moshavot, concentrating on citrus or vineyards. Before 1948 marketing was agriculture's most difficult problem, because it was forced to compete on the one hand with the cheap products of Arab farmers with a low standard of living, here and in neighboring countries, and on the other with imports, which were completely unrestricted and not subject to customs. Except for citrus exports, agriculture was, therefore, based primarily on the Jewish local market, and specialized in branches in which it enjoyed relative advantages — livestock (cattle and poultry), citrus, other fruit and vegetables.

Since the establishment of the State, agriculture has expanded its activity considerably. Farm production, in terms of 1966 prices, increased almost sixfold, and so did agricultural exports. This expansion became possible owing to the following factors: the number of persons employed in agriculture was doubled; the cultivated area was increased

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[1] Throughout this chapter the reference will be to agricultural years, which begin on October 1 of the preceding year and end on September 30 of the year specified.

2.5 times; the irrigated area expanded fivefold, use of irrigation water going up fourfold; the stock of capital rose fourfold in terms of 1966 prices; productivity rose considerably, by an average annual rate of 5–6%, thanks to greater skill, rising efficiency, better organization and technological innovations. The number of villages was tripled, and village population increased approximately to the same extent.

Agriculture's relative contribution to the national product rose until 1958, but has been declining since then. The rate of expansion in activity declined as time went on; since expansion has been rapid in other sectors of the economy, the share of farming has been declining. This phenomenon is characteristic of growth processes in most countries, but while farming elsewhere is generally the major occupation at the beginning of the development process and furnishes the manpower and capital accumulation for the development of industry and services, in Israel, which is a developing country of immigration, the decrease in the share of agriculture was caused by a change of direction in development, the reasons for which are examined below.

TABLE 2. Agriculture's Share of the National Economy, 1950, 1958, and 1966* (percentages)

	1950	1958	1966
Gross National Product**	11.5	14.9	9.6
Exports	48.4	40.4	18.8
Employment	17.3	17.6	12.6
Stock of capital**	39.4	23.8	16.7

* Calendar years.
** At current prices.

The development of agriculture may be divided into several periods with definite characteristics: the first five years, until 1954; the second five years, 1955–59; the third five years, 1959–64; and the years 1965–67.

The first five-year period was characterized by large-scale settlement based upon mass immigration, of which a large proportion was directed to agriculture. By the end of 1954 about 200 new moshavim, some 90 kibbutzim and about 90 villages of other types had been set up, while older settlements were enlarged. The types of settlement were in general similar to those set up before independence, based on mixed farming. Agricultural employment during this period increased by about 60%, and the Jewish rural population increased threefold. Agricultural settlement was accorded priority in the allocation of manpower and investment capital, because of the need to supply the growing population and to settle all parts of the country. It should also be remembered that at the time the economy could not offer many alternatives for the absorption of recent immigrants. Characteristic of the period were shortages in all branches of the economy, the most serious being the shortage of food. Before independence, part of the food had been supplied by the Arab sector in Palestine and the neighboring countries, but this line of supply was now cut off. During the War of Independence, too, much damage was done to

Jewish farms, lowering their ouput from 1947 to 1949 by one half. The population grew and demand with it, while the possibility of importing food from other countries was limited because of the severe shortage of foreign exchange. These shortages created a sellers' market for farm produce, in which prices were high, although the Government had introduced rationing and price control. For agriculture this constituted a revolutionary change from pre-State conditions, when the most serious problems had been marketing possibilities and competition with cheap Arab produce.

Farm production, encouraged by its profitability, could be expanded thanks to the investments in agriculture and output, therefore, rose rapidly, both in existing settlements and in new ones. Towards the end of the first five-year period, overall farm output had again reached the pre-War-of-Independence level. The most rapid development occurred in field crops, especially vegetables, and also in fodder. These depend mainly on land and water, which were at that time in relatively unlimited supply, while they need little capital investment and yield rapid results. Livestock products were in great demand and prices were high, but expansion was slower, mainly because of the limited supply of imported feed, which was due to shortage of foreign currency.

Exports accounted for about one-fifth of farm production, and they expanded slightly less than did total output. They consisted entirely of citrus, the output of which rose mainly as a result of the orchards' recovery from damage done during World War II and the War of Independence, and only to a minor degree because of new investments.

During the second five-year period, 1955–59, shortages were gradually reduced, both in respect of raw material and production inputs for agriculture and in respect of the supply to the consumer.

The rates of immigration and of settlement were reduced and only forty additional moshavim were set up. Most new settlement was concentrated in specific regions, Lakhish and Ta'anach, and a new type of farm unit was introduced, based on vegetables and field crops. During this period agriculture was still accorded priority in the allocation of capital, beyond its share of output and employment. While in previous years each settler was only given basic investments, activity now concentrated on the strengthening of villages previously established, which meant increasing the stock of capital per worker in agriculture. During the same time, extensive investments were made in irrigation, primarily in the Yarkon-Negev pipeline.

Farm output continued to rise, although more slowly than in the first five-year period, since food shortages continued to disappear. Emphasis was shifted to livestock branches, which are more capital-intensive and need imported feeds. During this period Israel received surplus food allocations from the United States totaling some $150 million between 1955 and 1960. About one-third of this consisted of feed grains, making for especially rapid development of poultry raising and dairy farming; surplus milk products were also imported to supplement consumption. Vegetable supply had already satisfied demand during the previous five-year period, and the expansion of production resulted in surpluses and declining prices. The producers reacted by organizing to plan and control this branch of agriculture; with Government assistance a "Vegetable Minimum Price

Fund" was set up, which later became the Vegetable Production and Marketing Board. In the course of time similar bodies were set up in all other fields. In fruit production, profitability remained satisfactory; prices were high and the Government prevented competitive imports, even of varieties which could have been imported. This profitability and the support given in financing investments encouraged further plantings; these led to greater output, though there was a lag of several years before the investments could yield results.

Citrus exports increased quantitatively, and prices also went up. The profitability of exports constituted an incentive for more plantings, which were further encouraged by favorably financing terms. Export of new products, such as groundnuts and eggs, was started and citrus declined to 80% of total exports. Still, exports rose less than during the previous five years, and at a rate lower than the increase in output. Consequently the share of exports in total production declined somewhat.

By the beginning of the 1960s the local market was relatively saturated in respect of most products at the prevailing price levels, so that production could expand only as the population increased or the standard of living rose. There was no great increase in population, and although the standard of living rose rapidly during the first half of the 1960s, the share of food in total consumption declined. Per capita food consumption rose slowly. Only certain products — beef and poultry, certain milk products and fruit — showing a larger increase. With the relative saturation of the market, output rose more slowly, and the terms of trade of the agricultural sector deteriorated as a result of a decline in the relative prices of farm produce.

As a result of all this, there arose a problem of declining profitability in agriculture. In most branches of farming this could only partly be covered by rising productivity. In most fields the method followed was organization in order to control marketing, plan production, and allocate production quotas. The Government encouraged this process by granting legal standing to the production and marketing boards in most branches of farming, and also by making annual agreements to cover terms of supply of certain products, such as vegetables and poultry. Government intervention through subsidies and administrative price-fixing also increased.

The branches which continued to expand rapidly during the third five-year period were poultry and fruit: poultry owing to greater consumption of chicken and the extensive Government-supported export of eggs, and fruit owing to the maturation of earlier investments. Because of the rising standard of living the larger quantities of most varieties of fruit were absorbed without prices falling to below production costs, and profitability in this field continued to be high.

Citrus exports increased considerably during this period. There were year-to-year fluctuations, caused by fluctuations in the size of the crop due to climatic conditions as well as by price movements abroad. Since citrus continued to be the largest component of farm exports — about 80% — these fluctuations caused similar changes in overall farm exports. At the end of the third five-year period farm exports were only slightly larger than at its beginning, although in 1963 they had already reached $90 million. There were also fluctuations in other export items. 1961 was the record year for egg exports, but these were reduced because they were not profitable to the national economy. Other items, of minor importance, showed slight increases.

Settlement activity almost ceased; both the number of villages and the number of persons employed in agriculture remained stable during the third five-year period. Investment continued at a slower rate than in previous years, because development priorities had been shifted from agriculture to other branches of the economy. Investments in irrigation increased because of the construction of the National Water Carrier. Since all investments were carried out in existing settlements, and there was a relative expansion of capital-intensive branches of farming, the stock of capital per worker increased greatly. Increasing mechanization made the introduction of technological improvements possible, with labor — especially unskilled labor — replaced by capital. This process contributed to the rise in per worker output.

During the last three years 1965—1967, there has been a slowdown in the activity of all branches of the economy, but although farm output also went up more slowly than in the past, this was not due to the recession, but to the specific limitations on agriculture, especially in respect of demand, which had already been noticeable in previous years. The process, which had already started in the previous five-year period, became more marked; local demand for farm products rose very slowly, as population increase slowed down and the share of income spent on farm products declined, while export did not expand fast enough to compensate for the slower rise in domestic demand. In respect of supply, the limiting factors were the dependence of Israeli agriculture on irrigation and the fact that further sources of water could not be developed at a reasonable price.

Together with the slowdown in the expansion of production, productivity continued to go up in consequence of the continuously increasing stock of capital, the maturation of investments, technological innovations and greater skill on the part of the farmers. All these factors caused a slight decline in the number of farm workers in recent years.

The stock of capital expanded more slowly in recent years, than in the past, owing to the above explained slowdown in activity and the reduction in public investment budgets, which was one of the expressions of the Government's slowdown policy.

The limitations of the local market helped to make it clear that agricultural activity could expand only through exports. In fact, exports went up more rapidly during the last three years than output, to the point where they accounted for one-fifth of all production, as during the first years of independence. Citrus exports — still 80% of the total — expanded rapidly as newly planted orchards began to go into production, with the aid of good growing conditions and good prices abroad. Other items also went up, with certain changes in their relative importance. Eggs, the export of which is not profitable, declined, but exports of fruit, vegetables and field crops, in which Israel enjoys relative advantages, doubled.

3. AGRICULTURAL PRODUCTION

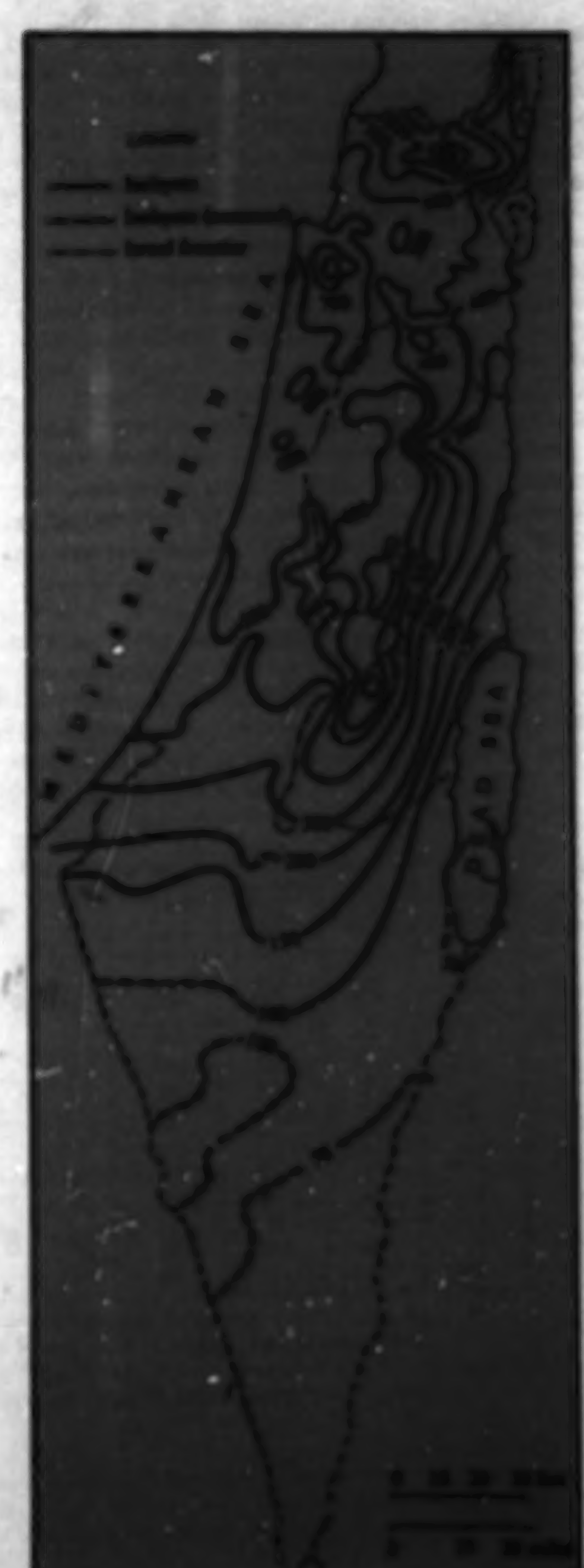
Agricultural production totaled IL 1,600 million in 1967, compared with IL 275 million (in terms of 1966 prices) in 1949 — practically a sixfold

TABLE 3. Agricultural Output* and its Composition, 1949 – 1967

	1949			1954			1959			1964			1967			Growth indices of output at 1966 prices				
	at 1966 prices		at current prices	at 1966 prices		at current prices	at 1966 prices		at current prices	at 1966 prices		at current prices	at 1966 prices		at current prices					
	IL. million	%	%	IL. million	%	%	IL. million	%	%	IL. million	%	%	IL. million	%	%	1954/1949	1959/1954	1964/1959	1967/1964	1967/1949
Total output	274.2	100.0	100.0	586.5	100.0	100.0	1012.3	100.0	100.0	1407.9	100.0	100.0	1607.0	100.0	100.0	213.9	172.6	139.1	114.1	586.1
Livestock	96.6	35.2	48.5	180.3	30.7	34.4	447.6	44.2	47.5	603.4	42.9	45.4	663.0	41.2	41.3					
Poultry	37.2	13.6	22.2	66.9	11.4	15.5	194.8	19.2	22.3	283.7	20.2	21.4	322.0	20.0	20.3	179.5	291.0	145.6	113.5	865.3
Cattle	47.1	17.2	17.9	78.5	13.4	12.4	182.6	18.1	17.5	235.7	16.7	17.3	245.0	15.2	15.0	166.4	232.7	129.1	103.9	519.3
Other livestock	12.3	4.4	8.4	34.9	5.9	7.5	70.2	6.9	7.7	84.0	6.0	6.7	96.0	6.0	6.0	283.7	201.4	119.6	114.0	780.5
Crops	177.6	64.8	51.5	406.2	69.3	65.6	564.8	55.8	52.5	804.5	57.1	54.6	944.0	58.8	58.7					
Citrus	79.7	29.1	15.7	137.5	23.4	20.3	171.7	17.0	15.2	245.1	17.4	15.1	304.0	18.9	18.5	172.5	124.9	142.9	124.1	381.7
Other fruit	23.1	8.4	7.5	47.5	8.2	8.4	74.8	7.4	8.3	157.8	11.2	12.1	193.0	12.0	10.8	205.6	157.7	210.6	122.4	836.3
Vegetables	34.6	12.6	12.0	93.5	15.9	11.8	126.9	12.5	8.9	148.2	10.5	8.4	155.0	9.7	10.3	270.5	136.7	116.9	104.4	447.9
Field crops	40.2	14.7	16.3	127.7	21.8	25.5	191.1	18.9	19.9	253.4	18.0	18.0	292.0	18.2	18.1	317.5	148.6	132.6	115.2	726.0

* Current output

Source: Central Bureau of Statistics.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AVERAGE RAINFALL DISTRIBUTION OVER ISRAEL

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increase (see Table 3). The increase is thus 10% a year over the entire period. The rate was more rapid during the earlier portion of the period and slowed down later on: in terms of 1966 prices the annual increase was 16% during the first five-year period, 12% during the second, 7% during the third, and about 4.5% during the last three years[1]. Naturally the rate of growth was not uniform, but fluctuated from year to year, owing to the climatic influences so important in agriculture.

During the early years output expanded especially quickly owing to demand factors (mainly the population increase, and also shortages caused by interruption of previous lines of supply), as well as favorable supply factors — available land, additional producers and capital investments. During this period prices of agricultural produce rose more than other prices in the economy. Later the demand expanded less rapidly — as the population grew more slowly and the rising standard of living was accompanied by a relative decrease in consumers' expenditure on food. Exports also developed slowly because of difficulties and limitations. As a result, the quantitative rate of expansion of output slowed down. Farm produce prices rose more slowly than other prices, including those of farm inputs, but with rising productivity this only had a partial effect on profitability.

Various branches of farming developed at different rates during this period. Faster than average was the quantitative expansion of poultry, fruit growing and field crops, raising their share of total output (see Table 3). Differences between the relative shares of the various branches of agriculture in terms of current prices and the ratios in terms of fixed prices can be explained by the changes in relative prices.

TABLE 4. Indices of Producers' Prices* of Agricultural Output**

	$\frac{1954}{1949}$	$\frac{1959}{1954}$	$\frac{1964}{1959}$	$\frac{1967}{1964}$	$\frac{1967}{1949}$
Total current output	**296**	**111**	**117**	**108**	**417**
Livestock	**275**	**117**	**118**	**107**	**405**
Poultry	289	112	110	105	376
Cattle	285	125	123	107	469
Other livestock	328	114	132	112	555
Crops	**354**	**106**	**118**	**110**	**490**
Citrus	555	117	122	119	950
Other fruit	400	96	95	94	342
Vegetables	261	109	163	123	574
Field crops	345	108	116	108	466

* Cumulative year-to-year growth rate.

** Exclusive of production of capital goods in agriculture.

Source: 1949–58 and 1966–67 calculated from data of the Central Bureau of Statistics. 1959–69 – Bank of Israel reports.

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[1] A different method of computation — comparing each year's output with the previous one's, in terms of the previous year's prices — shows the rise to have been 19% during the first period, about 15% during the second, 9% in the third, and 6% during the last three years, the average for the entire period thus being 13%.

Because supply grew far more than demand, relative, prices of poultry declined sharply over the whole period, and for the same reason there has been an absolute price decline for fruit since the mid-50's. Relative prices of citrus rose to a marked extent, owing to favorable conditions in export markets. There was a decline in relative prices of vegetables in the 50's and an increase in the 60's owing to the organization of producers' marketing boards.

These developments resulted in an increase in the share of plant crops, in terms of current prices, from 50% in 1949 to nearly 60% in 1967, while livestock showed corresponding declines. Developments in each separate branch of farming will be discussed in detail below.

a) Cattle

Cattle husbandry, with the growing of cattle fodder, was for many years considered to be the mainstay of the mixed farm. Its major advantage lies in its slight dependence on natural conditions, with consequently little fluctuation from one year to the next. There is almost no seasonal variation; production is more or less even throughout the year, resulting in balanced employment and a uniform rate of income, which in turn reduces the amount of operating capital required. In the past, much importance was also attached to its by-product — manure — as an important factor in soil amelioration. As far as marketing potential is concerned, the local market is to a large extent reserved for local producers, since much of their output cannot be replaced by imports, which are, furthermore, under Government control.

TABLE 5. Development of the Cattle Branch, 1949–1967.

	1949	1954	1959	1964	1967
Percentage of total farm output*	17.9	13.4	17.5	17.3	15.0
Value of output (IL million, in terms of 1966 prices)	47.1	78.5	182.6	235.7	245.0
of this, milk output	29.6	55.0	97.4	120.9	144.0
Annual growth rate of output**		14	18	8	3
Number of milch cows in Jewish farms ('000)	20.8	38.4	63.0	67.5	73.6†
Milk production (million liters)	78.7	146.6	259.5	315.2	383.0
Meat production (1000 tons)	2.0	4.0	18.9	35.5	30.5

* Current prices.

** Based on each year's production, in terms of the previous year's prices.

† 1966.

Source: Central Bureau of Statistics.

Before 1948, and during the first few years thereafter, cattle were raised in most settlements. During the first five-year period expansion lagged behind demand, which grew with the population increase. This branch of farming needs capital investments and know-how, so that its introduction to new villages was slower than the increase in demand and the general increase in agricultural production — it declined from 18 to 13% of the total. The severe shortage of foreign currency at the time was also a limiting factor, since imported investment goods — namely, cows — and other imported inputs were needed. Still, output was almost doubled through the establishment of new dairy herds and the expansion of existing ones. The shortage of products was covered by the Government, to a limited degree, through the import of powdered milk, cheese and meat. Because dairy products, especially fresh milk for growing children, are vitally important to the diet, rationing and price controls were introduced.

During the second five-year period conditions changed, and investments in dairy farming increased rapidly. The number of cows grew by about 70%, partly from imports, and milk production increased correspondingly. Meat production increased by a factor of 4.5, to constitute about one-third of total production by this branch of farming, compared with less than 10% during the first five-year period, and increased output made it possible to do away with rationing. Profitability was good; milk prices were, and still are, controlled, but in order to bridge the gap between rising production costs and low retail prices, subsidies were instituted and these have increased with time. Meat prices, on the other hand, were not controlled, although they were influenced by the price of imported meat — 40% of consumption at the end of the period, compared with 80% at its beginning.

During the third five-year period the rate of expansion slowed down, and it has continued to decrease in recent years.

Under conditions prevailing in Israel, productivity advanced considerably, and the yield of milk per cow is the highest in the world. However, production methods used here are expensive: while in most countries cows are pastured, in Israel fodder must be grown, raised and fed to the animal. The cost of dairy production is, therefore, high in comparison with the prices of commodities that can be imported. This is expressed in the high costs per dollar saved for these items — over IL 10 per dollar for butter and hard cheese, and more than IL 8 per dollar for meat — which are maintained through restrictions on import imposed by the Government to protect local producers.

Government intervention by means of price supports for milk and milk products has increased considerably, owing, on the one hand, to rising costs of dairy production, and on the other, to the Government's unwillingness to let prices be freely determined owing to the importance of milk in the diet. Although milk and milk product prices rose more slowly than other prices, and in spite of the rising standard of living, per capita demand for milk has hardly increased, except for a few milk products, and it has remained low in comparison with that in developed countries.

The limitations imposed upon the increase of production have led to competition between producers and to the abandonment of dairy farming by those who could not meet changing conditions. Small dairy herds near the major cities, which had supplied about one-third of all the milk in 1948, had been almost completely liquidated, with the Government assistance, by the end of the third five-year period. Their place was at first taken by the moshavim, who increased their share from one-third to two-thirds of total output. Because of advantages of scale associated with larger herds and the growing of fodder, the kibbutzim have raised their share of the total to 50%, at the expense of the moshavim, in recent years. Within the moshavim the process has been one of concentration, a smaller number of farm units owning an increasing number of cows (a herd of 12 to 15 milk cows is now considered the optimum).

Because of demand limitations, production quotas have had to be allocated to each farm, and this has been done since 1960 by the Milk Production and Marketing Board and the Ministry of Agriculture. For several years restrictions were vigorously maintained, but in order to encourage specialization in dairy farming, they have been eased and production quotas increased during the last two years. The reaction to this was immediate, and considerable surpluses of milk were produced, resulting in stored reserves of butterfat, for which there is no use.

Conditions were different in respect to meat. As the standard of living increased, so did per capita beef consumption. Profitability improved and certainty was assumed by the establishment, in 1960, of a minimum price system. As the dairy herd expanded, so did the production of meat from culled cows and also from the raising of bull calves. The raising of special beef cattle also developed. Meat production doubled during the third five-year period, in line with doubled per capita consumption, though the share of local production dropped somewhat, from 60 to 50%. During the last three years there has been a slight decline in the production of meat because of a change in the relative profitability of meat production and a tendency for dairy herd expansion. The recession only slowed down the growth of meat consumption, but did not decrease per capita figure, so that the need for imports continued to rise.

b) Poultry

During the first five-year period the demand for poultry produce boomed, because of the increase in population and the interruption of pre-State channels of supply from the Arab sector in Palestine and neighboring countries. However, because of the shortage of foreign currency for the import of poultry feed, production increased by only 12% a year and did not meet the demand. Importation of eggs and poultry meat was limited. Rationing and price control were introduced, with only partial success because of difficulties of control, and the supply of feed was linked to the amount of farm produce marketed.

TABLE 6. Development of Poultry Branch, 1949–1967

	1949		1954		1959		1964		1967
Percentage of total farm output*	22.2		13.5		22.3		21.4		20.3
Value of output (IL million, in terms of 1986 prices)	37.3		66.9		194.8		283.7		322.0
Of this, eggs	26.6		45.4		112.6		140.1		151.8
Annual growth rate of output**		12		27		9		4	
Egg production (million units)	242		414		1027		1278		1387
Meat production ('000 ton)	5.0		9.3		40.6		74.5		88.5
Exports ($ million)	0.0		0.2		7.3		6.0		7.9

* Current prices.

** Based on each year's production in terms of the previous year's prices.

Source: Central Bureau of Statistics.

The poultry industry developed rapidly during the second five-year period, when the average annual growth rate was about 27%. Beginning with 1954 the quantities of feed, imported primarily from U.S. surplus food allocations, were increased, and the gradual elimination of rationing and control became possible. Investment capital was made available to farmers on favorable terms. Since poultry breeding is highly elastic under suitable conditions and can be expanded rapidly, development was stepped up during the second five-year period, especially on family farms. Special assistance for this expansion was offered to new villages, mainly in mountain regions, where alternative sources of livelihood are lacking.

Since the poultry industry supplies Israel consumers with a relatively inexpensive source of animal protein and occupies an important position in the diet constituting 13—14% of total expenditure on food — the Government was interested in assuring the consumers a stable and plentiful supply at low prices. To this end the Poultry Agreement was signed in 1957 between the Government and the farmers, fixing maximum retail prices, minimum egg prices for the producer, and agreed prices for feed allocations. These arrangements led to the rapid expansion of egg production — about 45% in the first year alone — and although per capita consumption of eggs rose by 50% during the second five-year period and meat threefold, the domestic market did not absorb the entire output at the prices fixed. Export was used as a solution to the problem of surpluses, in spite of low profitability and the Government, under the terms of the agreement, covered all the losses.

In 1961 some 416 million eggs were exported, yielding about $12 million, and necessitating payment of IL19 million in subsidies. The Government then decided to restrict its responsibility, thus limiting the development of the poultry industry. The local market was also saturated at prevailing prices, because the increase in per capita consumption had only been 15% in respect to eggs and 50% in respect to meat during the entire third five-year period. The industry's growth rate was, therefore, reduced to 9% a year, exports still accounting for nearly 15% of egg production in 1964.

During 1965—1966, the industry was successfully kept in line, with almost no growth; exports were cut back, and unorganized marketing was less than 10% of the total. However, attempts to change price policy led to large increases in production in 1967, with consequent large surpluses. Egg exports again increased and in 1967 totaled 150 million units, and in addition stocks of surplus eggs remained in store.

The capital invested in this industry, greater productivity due to technological improvements, and the lack of alternative sources of income on many farms created a productive potential far in excess of the potential market at prevailing prices. The industry's main problem became how to control growth. Several methods have been adopted, such as production quotas, and price and subsidy policies. These have not achieved their objective, and it seems that, with the methods followed so far, it is almost impossible to plan this industry from above.

c) Other Livestock

Other livestock branches supply 7—8% of total agricultural output, rising from IL12 million in 1949 (in terms of 1966 prices) to IL100 million in 1966.

This is composed of approximately 40% sheep's milk and mutton, 40% fish, 15% pork, and the remainder honey.

About one-third of sheep production is in the Arab sector, where its importance is great and it contributes about 12% of total agricultural output. Production has expanded eightfold since 1949, to total some IL40 million.

Fish production rose about sixfold: about two-thirds are pond carp and the rest come from sea and lake fishing. Per capita consumption of fish declined from about 18 kg per year, including imports during the early years, to some 10 kg during the past ten years, local output supplying some 80%. In the 50's, fish ponds, located mainly along the Jordan River, utilized 20—25% of all the water available for agriculture. When the National Water Carrier was put into operation, the more effective utilization of water for irrigation purposes became possible. The raising of carp in sweet water became wasteful from the point of view of the national economy, and the tendency now is to restrict it to brackish or regenerated water. Deep-sea fishing developed considerably after the acquisition of deep-sea trawlers; sea fish have recently begun to compete with carp and have caused a decline in all fish prices.

d) Citrus

This is the oldest branch of Israel agriculture. It was developed rapidly as an export industry in pre-State days, when large sums of capital were invested in it, primarily private capital by growers and non-farmer investors, and also public capital in moshavim and kibbutzim. In addition, the Arab sector owned about half of the planted orchard area before World War II. In 1938 exports totalled about 700,000 tons, but isolation from export markets caused many orchards to be neglected during World War II. The War of Independence, during which many orchards were seriously damaged, began before the industry could recover, and in 1949 it was in poor condition.

TABLE 7. Development of the Citrus Branch, 1949—1967

	1949	1954	1959	1964	1967
Percentage of total farm output*	15.7	20.3	15.2	15.1	19.5
Value of output (IL million, in terms of 1966 prices)	79.7	137.5	171.7	245.1	304.1
Annual growth rate of output**		12	5	5	10
Exports ($ million)	18.1	33.6	45.9	58.0	83.7
Production ('000 ton)	272.7	470.5	587.6	838.9	1,082.0
Exports ('000 ton)	–	304.9	376.5	454.3	705.9
Planted area ('000 dunam)	125	164	300	440	458
Water utilization (million cu. m.)	88	120	220	285	345+

* Current prices.

** Based on each year's production in terms of the previous year's prices.

+ 1966.

Source: Central Bureau of Statistics.

During the first five-year period main priority was given to the rehabilitation of existing orchards, and loans were provided on favorable terms to this end. This immediately resulted in larger crops, with an average growth in output of approximately 12% a year, raising citrus' share of agricultural output again to 20%. Exports went up at the same rate as production because all the fruit of export quality, about two-thirds of the total, was sent abroad. At that time citrus furnished the major portion of Israel exports, especially as the percentage of added value for this product is higher than with industrial exports.

During the second and third five-year periods, the annual growth rate declined to 5%, with year-to-year fluctuations — due on the one hand to climatic conditions in Israel or in competitor countries which affect crops and prices, and, on the other hand, to climatic conditions in the buying countries, which affect the supply of deciduous fruit, and in turn, citrus prices. Thus, uncertainty and instability dominate the citrus export markets, causing fluctuations in prices and incomes.

The domestic market for fresh citrus fruit is fairly limited, and has declined from 15 to 10% of total citrus sales. The remainder of fruit unsuitable for export ("brara") goes to the processing industry, which also sells most of its output abroad. The price paid by industry for a ton of culls is very low, only about 15% of the return on exported fresh fruit.

The condition of the export market of fresh fruit is thus decisive for profitability. Since 1948 export prices have varied between $ 100 and $ 150 per ton FOB; the common average is in the neighborhood of $ 125 per ton, and there is an upward tendency, but it must be taken into consideration that there has been a general rise in prices in Europe.

During the second five-year period efforts were initiated to expand the industry through additional plantings. Investment capital on favorable terms was made available to the farms by the Government. Profitability encouraged plantings, which proceeded at the rapid rate of some 30,000 dunams (7,500 acres) a year on the average, so that the planted area was doubled and again reached the pre-World War II total. Plantings continued at this rate also during the third five-year period and today the total area of citrus orchards is 3.5 times as large as it was in 1948. These large plantings increased the annual rate of growth of output to 10% during recent years.

It should be added that the rapid expansion of the industry has been facilitated by central organization of marketing and export, which prevents Israeli producers from competing among themselves on foreign markets and makes for more efficient marketing. The Citrus Marketing Board is solely responsible for all stages of marketing, including market research and publicity, negotiations with customers, supply of packing materials, collection of the produce, transportation arrangements with shipping lines, allocation to various uses and markets, sales, and the distribution of the proceeds.

Expansion of citrus farming was accompanied by structural changes. Orchards were now also planted in areas outside the traditional "citrus belt," in the Sharon and coastal valleys. In the past the Jaffa oranges had constituted most of the output, but now other varieties — grapefruit, Valencia oranges, lemons, etc., accounted for about 45% of the total. Many orchards were planted in new villages, mostly with finance from the Jewish Agency. This has reduced the private sector's share to 45% of the planted area, while the moshavim account for about 35% — about half in new settlements — and the remaining 20% are in kibbutzim. Citrus plantations now cover about one-third of the irrigated area and use the same share of the available water, in Israel.

During the past two or three years, further expansion of the industry has slowed down. Despite higher productivity as a result of more efficient cultivation, picking, packing and marketing, profitability showed signs of declining, especially in groves planted in newly planted areas. In addition, there are growing apprehensions of a fall in prices in export markets owing to forecasts of increased overall production of citrus and the restrictions imposed by the European Common Market.

While Government policy encouraged investments in citrus plantations, it frequently discriminated against the industry in respect to export returns. During interim periods, between exchange-rate adjustments through devaluation, export was encouraged by a system of supports and premiums, which were paid primarily to weak industries. Like other profitable industries of value to the national economy, citrus received little support, in spite of its contribution to exports and its high rate of added value. Because of this, devaluation, on the occasions when it was carried out, was especially effective for this industry, immediately increasing its export income and the value of its output. Such extreme changes of profitability naturally had their effects, and it may be assumed that at times they had adverse effects on expansion.

e) Fruit Orchards

Only a small part of the demand for fruit was supplied by Jewish farmers before the establishment of the State of Israel, and this branch of farming remained small because of inability to compete with cheaper production by Arab farmers. In 1948 most of the sources of supply were blocked: imports from neighboring countries stopped, and no foreign currency was allocated for imports of transportable varieties. Most of the Arab orchards that remained within the borders of Israel were destroyed during the fighting, or were neglected because they could not be adapted to the methods of Jewish farmers. As a result, the supply of fruit was very limited, and constituted only 7% of total farm production — one-third of which consisted of olives, grown mostly in Arab villages. Owing to shortages, prices rose, in spite of rationing and price control introduced during the early years.

High prices and the protected local market encouraged further plantings, which were also encouraged by Development Budget loans on favorable terms to cover a large part of the investment. The Jewish Agency carried out plantings in the new settlements, thus also providing employment for the new settlers during their first years on the land.

The area of orchards constantly expanded. During the first decade about 15,000 dunams (3,750 acres) were added every year, doubling the area of fruit tree plantations (except olives, which concentrated in Arab villages and did not expand). The rate of expansion was slowed down somewhat during the third five-year period, owing to price declines and expectation of further falls, as well as to the administrative restrictions imposed in 1960, when it became necessary to obtain Ministry of Agriculture licences for all new plantings. Nevertheless, growth continued at the rate of 10,000 dunams a year, and this was reduced only during recent years. A large portion of the orchards is under irrigation, and 15% of all irrigation water is devoted to the production of fruit (other than citrus).

TABLE 8. Developmentof Fruit Branch, 1949–1967

	1949	1954	1959	1964	1967
Percentage of total farm output*	7.5	8.4	8.5	12.1	10.8
Value of output (IL million, in terms of 1966 prices)	23.1	47.5	74.9	157.8	193.2
Of this: deciduous fruit	3.9	8.4	23.0	80.3	89.2
table and wine grapes	7.1	12.0	21.7	33.3	29.9
bananas and other subtropical fruit	3.1	9.4	23.6	33.5	36.3
olives	8.8	17.7	6.6	10.7	17.8
Annual growth rate output**		15	19	24	6
Planted area ('000 dunam)					
deciduous fruit	25	38	71	109	117
vineyards	48	98	115	119	113
bananas and other subtropical fruit	20	36	69	81	87
Total, other than olives	93	172	255	309	315
Olives	137	139	130	120	110
Water utilization (million cu. m.)	20	60	105	130	170†

* Current prices.

** Based on each year's production in terms of the previous year's prices.

+ 1966.

Source: Central Bureau of Statistics.

Output rose at an increasing rate, as investments matured and additional areas began to yield. The most impressive gains were in deciduous fruits, (mostly apples, but also pears, plums, peaches and apricots), the production of which is now 30 times what it was in 1948. Most of this expansion took place in kibbutzim, primarily in the Jezreel and Huleh valleys, which supply a large part of the deciduous fruits, the remainder coming from moshavim in the Galilee hills and the "Jerusalem Corridor," where growing conditions are less advantageous. During the early years these varieties of fruit were considered a luxury item, with per capita consumption not above 2 kg per year. Now they have become part of popular consumption, exceeding 30 kg per capita annually. Rising output has been accompanied by declining prices, which reduced profitability, but in most instances deciduous fruit production is still profitable.

Grape consumption had already reached a relative saturation point — 10 to 12 kg per person — during the second five-year period. Production having risen fourfold (two-thirds table grapes and one-third wine grapes). Vineyards are mostly located in Samaria and the southern hill areas. Wine grapes are grown, mostly unirrigated, primarily by private farmers in the moshavim, while most of the table grapes are produced in irrigated vineyards in the new moshavim. With profitability going down, there has recently been a tendency to uproot marginal areas.

Production of bananas and other subtropical fruit increased tenfold, as increased consumption became possible. There was a shift from varieties which had reached the saturation point, such as bananas, to newer varieties like avocado, mango, etc. Most of the orchards are located in the Jordan Valley, in the lower areas of Western Galilee and along the Carmel coast, and they are mostly owned by kibbutzim. These varieties have an export potential because of Israel's climatic advantages. Banana exports began in 1954, reaching 20,000 tons, about 35% of banana production, worth $2.3 million, in 1966. Although prices are lower abroad than at home, exports were made possible through organisation by the growers to keep prices up in the local market. Market developments in Europe caused banana exports to decline last year to 15,000 tons and $2.1 million, but avocado exports, which started in 1962, continued to rise and reached about $1 million in 1967. Avocado exports are very profitable to the national economy, owing to the high prices in Europe (which are above those obtainable in Israel).

Several factors explain the profitability of fruit production, which remained high even after it declined as a result of a considerable rise in output. Consumption of fruit rose more rapidly in keeping with the rising standard of living than that of other types of food, since it is more elastic in relation to rising income. The Government adopted a policy of protection by prohibiting import even of those varieties, such as apples and pears, which could have been brought in at prices far below those prevailing at home. Productivity rose to a considerable extent, owing to higher yields and lower labor inputs in consequence of mechanisation. Better and more varied types were introduced; more was grown of the early and late ripening varieties; the season was lengthened; cold storage facilities were expanded to smooth out seasonal fluctuations; sorting, packing and marketing methods were improved.

The industry began to organize when the Fruit Production and Marketing Board was set up with Government help in 1960, when surpluses appeared in some varieties and possible declines in prices and profitability were predicted. In recent years the Board has set up funds to equalise the prices of those varieties in which surpluses appear. At this time seven such funds are operating. They collect levies on the fruit marketed and receive Government support, which has been rising and reached IL2.7 million in 1967.

f) Vegetables

The development of vegetable growing in Israel is characterised by rapid expansion during the first years, followed by a slowdown in the rate of expansion, to practical stagnation at present.

During the first five years output increased almost threefold, by approximately 23% annually on the average. This rapid expansion was made possible by the fact that if vegetable growers have land, water, labor and only small amounts of capital at their disposal, expansion is possible within a few months. This was the situation during the first five-year period. Settlement activities were widespread and manpower was not fully occupied; the utilization of the irrigated areas for vegetable growing made it possible to earn immediate and large incomes relative to the area used. Employment provided by this branch of farming is extensive and fairly stable throughout the year, while little know-how was necessary and could be acquired within a short time.

TABLE 8. Development of Vegetable Branch, 1949–1967

	1949	1954	1959	1964	1967
Percentage of total farm output*	15.0	11.3	8.8	8.6	10.3
Value of output (IL million,					
in terms of 1966 prices) — total	56.8	85.4	130.9	140.9	154.9
vegetables	50.3	44.8	81.8	100.4	108.1
potatoes	8.0	18.1	26.9	26.5	31.8
melons and watermelons	3.3	12.4	21.1	23.4	26.8
Annual growth rate output**		22	[illegible]	[illegible]	[illegible]
Cultivated area ('000 dunams)†	69.0	228.4	211.8	221.6	240.7§
Water utilization (million cu. m.)	50	138	117	97	108§

* Current prices.

** Based on each year's production, in terms of the previous year's prices.

† Exclusive of unirrigated melons and watermelons.

§ 1966.

Source: Central Bureau of Statistics.

During the first five years, expansion was made possible by the addition of new producers and considerable expansion of the cultivated area. Per dunam yields declined during this period because of the entry of inexperienced growers, but yields very soon increased again, and since 1954 the area has remained practically unchanged, though output has increased.

Because of the large labor input, this branch of farming is suitable for the family farm; therefore it has continued to concentrate in moshavim, while declining in kibbutzim. Only with the introduction of machinery did the kibbutzim return in recent years to the production of root crops, such as potatoes, carrots and onions.

Because of this rapid expansion, there was hardly any shortage of vegetables at the prevailing prices even during the early years. Per capita consumption had already reached the level prevailing today at the end of the first five-year period. This totals 120 kg per person per year (33% tomatoes, 10–15% cucumbers, 8% carrots, 7% onions) with an additional 30 kg of potatoes. Vegetables constitute about 10% of expenditure on food consumption. The rise in the standard of living made almost no change in vegetable consumption per capita, and the slight increase that did occur was due to greater variety and longer seasons of supply. Government policy limited competitive imports, even of potatoes and onions, where storage is needed to assure supply throughout the year, which raises costs and makes the dollar saved during marginal seasons very expensive.

In recent years, with population increase slowed down, vegetable production has stagnated; the only way to break out of this stagnation is through the export of vegetables, fresh or processed. Export of vegetables — perishable products, for which marketing procedures are complicated —

expanded slowly. Beginning in 1954, foreign sales reached $2 million in 1962 and $3.3 million in 1966, declining to $1.8 million in 1967. Vegetable exports thus constitute an insignificant portion of vegetable production. Exports of processed vegetables, primarily tomato preserves, increased from $4 million in 1962 to $9.3 million in 1965.

Considerable technological advance has been made in this branch, resulting in greater efficiency and much higher yields per dunam. Varieties have been improved and diversified; mechanization and equipment for the harvesting of root vegetables have been introduced; sorting, packing and marketing methods have been improved, even if fairly slowly. In recent years the industry has undergone a technological revolution, with the introduction of vegetable growing under plastic covers and in hothouses.

The major problem, in vegetable growing — namely, the seasonal fluctuations in supply — already appeared during the early years. For the consumer, this meant scarcity and high prices at the beginning and towards the end of the season for each vegetable. This phenomenon had additional implications in times of inflation, when the cost-of-living wage-bonus was adjusted four times a year to the monthly price-level. Because vegetables were a major portion of consumption, seasonal fluctuations in their prices led to rises in the cost-of-living index. To counteract this influence on the index, the Government paid fairly extensive subsidies for brief periods (occasionally only for a few days at a time) to keep down retail prices. Only at the end of 1958 was a special arrangement made for calculating fruit and vegetable prices in the cost-of-living bonus. As far as the producer is concerned, seasonal fuctuations become a problem at the peak of the season, when surpluses appear and prices drop. If these price declines are severe and affect profitability, the individual producer usually reacts by reducing his output next year or next season. Prices are consequently liable to rise, causing expansion of production, and the cycle starts all over again. In an attempt to prevent the creation of this type of vicious circle, the Vegetable Minimum Price Fund was set up in 1955 to absorb surpluses, defined as those quantities not sold on the market at previously agreed-upon minimum prices. These operations were financed out of levies on the quantities marketed, to which the Government added its support of about IL5 million a year, because of its interest in orderly and stable supply to consumers. In June 1956, a first agreement was signed between the Fund and the Ministry of Finance assuring producers of minimum prices for nine varieties of vegetables. In response to greater certainty and continuously rising productivity, vegetable production continued to grow beyond the market's absorptive capacity at the prices set. This led to increasing surpluses, and Government subsidy payments reached a record of IL21 million in 1958. In 1957 the fund was replaced by the Vegetable Production amd Marketing Board, whose scope was expanded when a law was passed in 1959 authorizing it to organize marketing, plan overall production and allocate this to producers in the form of production quotas. The Board was granted authority in respect to seven varieties, reduced in 1967 to five major varieties, for which minimum prices have been set in advance of each season, and production quotas allocated by cultivated area, based on estimated average annual crops. The Government finances most of the Council's expenditure on the absorption of surpluses and market stabilization by means of storage, export or transfer to industry. Subsidies have fluctuated from year to year; they declined from 1958 to 1961, rose again to IL 16 million in 1963, in terms of current prices, and have been reduced since then to IL5 million in 1967.

As a matter of fact, it is difficult to point out successes in the Board's activities, either in preventing surpluses or in stabilizing retail prices. In spite of all efforts to organize production in this field, annual fluctuations in surpluses and prices have not been any lower in recent years. For this there were several reasons: production quotas were allocated by area rather than by quantity, so that the restriction could be evaded by higher per dunam output; the producers' minimum prices were apparently set too high, and were not made conditional upon the quantity of the surplus; changing weather conditions make precise quantitative planning impossible; when the objective is minimum supply even under unfavorable weather conditions, it is reasonable to expect surpluses when the weather is good.

g) Field Crops

In terms of cultivated area, field crops occupy a prominent position in Israel agriculture, accounting for two-thirds of the cultivated area and one-third of the irrigated area. These, however, are extensive crops with low output per unit of area; consequently their share of total output is lower. In 1949 they constituted 17% of the total; during the first five-year period this rose steeply, because large, vacant areas and irrigation water were available, it was possible to organize cultivation centrally and investments did not take long to mature. The growth rate was very rapid, nearly 30% a year on the average, and this branch of farming grew to account for 25% of total output. This growth rate slowed down in following years until field crops again accounted for 18% of output.

TABLE 10. Development of Field Crop Branch, 1949—1967

	1949	1954	1959	1964	1967
Percentage of total farm output*	16.3	25.5	18.9	18.0	18.1
Value of output (IL million, in terms of 1966 prices) — total	40.2	127.7	191.1	253.4	292.1
roughage	14.0	33.5	56.7	60.8	52.5
grains, legumes (and their straw)	19.0	54.2	62.7	97.5	99.9
industrial crops	4.5	31.9	57.3	81.7	122.6
miscellaneous**	2.7	8.1	14.4	13.4	17.1
Annual growth rate of output†		28	11	7	4
Cultivated area ('000 dunam)					
Roughage	222.7	572.3	742.7	589.3	625.8
Grains	631.9	1564.2	1,578.8	1,686.9	1,364.1††
Industrial crops - irrigated	0.8	47.4	140.4	200.1	292.9††
Industrial crops - not irrigated	49.3	111.8	112.6	97.3	101.0††
Water utilization (million cu. m.)	45	161	318	308	421††

* Current prices.

** Seeds, flowers, green manure.

† Based on each year's production in terms of the previous year's prices.

†† 1966.

Source: Central Bureau of Statistics.

This branch of farming is composed of several sub-branches.

Roughage includes intermediate products — such as green fodder, hay, and silage — which are needed as feed for cattle. Thus, it expansion was linked to the expansion of the cattle herd. In general each farm grows its own feed, and there is practically no commerce in these commodities.

During the first five-year period, roughage production expanded more rapidly than the dairy herd, because imported grain was in short supply, and to a certain extent the one can be replaced by the other. Fodder is generally grown under irrigation; the price of water, which is a major factor of total production costs, thus becomes a limiting factor in relation to dairy development. In order to overcome this limitation, greater efficiency was called for in fodder production and utilization. In later years, fodder production expanded more slowly than dairy output as a result of considerably higher efficiency in the production of fodder and a change in feeding methods: reducing the proportion of coarse fodder in the feed and increasing the proportion of imported concentrates. Thus, the amount of water necessary for milk and beef production was reduced indirectly.

Grains and Legumes include grain for human consumption (wheat) and for animal feed (barley, corn, sorghum and feed legumes). Wheat, barley and legumes are produced by dry farming during the winter, while corn and sorghum are summer grains, which can be grown either with or without irrigation.

Grain production rose almost threefold during the first five years, when cultivation was undertaken on practically all the land where rainfall was adequate for unirrigated tilling. Foreign currency was in short supply; grain production was considered essential and received Government support in the form of credits to cover investments, such as machinery, and guaranteed prices for the produce. As a matter of fact, the price guarantee was superfluous, as grain production was highly profitable, especially if used as poultry or cattle feed; the tendency was, therefore, to grow barley rather than wheat. In more recent years price policy has made wheat growing more profitable, and it now far exceeds barley. During the years after the great expansion, there remained no room for further expansion of the dry farming area; what is more, it became necessary to restrict it to regions where the probability of drought is not high, in order to reduce the risk borne by the Government, which usually covers the farmers' losses due to drought. Although the area has hardly been expanded, grain production has been practically doubled since 1954 (although year-to-year fluctuations due to the amount of rainfall have been extreme), mainly owing to better seed varieties and considerably higher per dunam yields. Per dunam yields of wheat and barley have practically doubled since 1948; a high-yield variety of sorghum has been developed, which has almost completely replaced corn as a feed-grain crop. Part of the summer grains are raised under irrigation, since the water supply has been increased.

Since it is impossible under Israeli conditions to produce all the grain necessary to feed man and livestock, imports cover a large portion of consumption. Israel benefited from the availability of U.S. surplus grain at convenient terms, especially at the beginning of the period. As the Government is the only importer of grain, decides on the quantity to be brought in, and sets prices for the local market, it thus determines the profitability of local grain production. Government policy is determined by conflicting aims: on the one hand, it is desirable to develop local production as a substitute for imports; on the other, it is desired to keep the price of imported grain as low as possible — wheat, because of the price of bread, and feed grains, because the prices of dairy and poultry products determine the volume of Government support required.

Industrial Crops have expanded, in terms of output, 25 times since 1948. To a certain extent this rapid growth is due to the fact that these are new crops in Israel, almost unknown before the establishment of the State. At that time conditions were unsuitable for extensive cultivation, as industrial crops demand much land and water in relation to the employment and income they furnish.

During the first five-year period, industrial crop output, beginning from practically nothing, increased sevenfold. One-third of this was tobacco, which is found mostly in Arab villages. No further expansion has taken place in this crop since then, and its volume has remained fairly steady at IL10 million, with annual fluctuations due to the amount of rainfall and other natural conditions. Local tobacco, which is mostly of the oriental varieties, supplies about half of domestic demand.

The cultivation of groundnuts, which was introduced during the first five-year period, developed rapidly, owing to good profitability and the availability of water and suitable land, especially in the light soils of the Sharon. At first groundnuts were considered a source of oil, but it soon became clear that this was not worthwhile, as alternative imported oil grains were much cheaper and were available on easy terms from the U.S. food surpluses. However, it was found possible to export groundnuts from Israel for eating purposes. Because of their high quality, Israel-grown groundnuts earn high prices abroad, which exceed those of the local market, and every effort is therefore made to export all the nuts of suitable quality. In 1954 $1.3 million was earned by sales abroad, making groundnuts the pioneer of farm exports after citrus, and exports rose to $2.3 million in 1961 and 1962. This was followed by a decline in output, caused by the planting of citrus groves on land suitable for groundnuts, limitations imposed by crop rotation, and the high risks involved because of the crop's vulnerability to pests and weather conditions. Furthermore, until recently Government price policies had made for low profitability of crops that compete with groundnuts for land and water — mainly cotton and potatoes — although its profitability to the national economy is no less, and perhaps even higher. Government support for groundnut production has risen slowly, totaling about IL 2.5 million for each of the last two years.

Sugar beet cultivation was developed during and since the second five-year period, after three sugar refineries were activated in 1955 (later reduced [illegible]). Although it was known in advance that locally produced sugar w[illegible] be much more expensive than imports, it was decided to enter this field in order to reduce dependence on imports. World market prices are fixed on the basis of sugar production from cane, a low-cost source. Even when sugar brought peak prices, such as $200 per ton in 1963, compared with $70—80 in most years, local production was more expensive than imports. The Government, which is the only importer of sugar and fixes its retail price, assured the profitability of local sugar production by agreeing to buy up the entire output at the level of production costs — about IL950 per ton — and to cover the difference out of its budget. Farmers find sugar-beet growing profitable and very convenient. Prices are assured at a level which will cover production costs, and there is almost no risk involved. Cultivation is done at the end of the winter, when practically no alternative use is available for irrigation water, and little alternative employment can be had. Output therefore developed rapidly to about IL20 million, and it became necessary to allocate production quotas to individual farmers, in accordance with the capacity of the two sugar refineries. Local output of sugar now covers about 35% of consumption.

The above industrial crops — tobacco, peanuts and sugar beet — had already reached their volume in previous years, and they have not continued to expand. The only industrial crop to continue expanding at a rapid rate is cotton, the cultivation of which started, after some experimentation, in 1955, and which reached an output of IL75 million, in terms of 1966 prices, in 1967. The common variety here is Acala, with a medium-length fiber, which now supplies all the demand by Israel spinneries for this length of staple, as well as increasing quantitities for export. Exports have gradually increased, from $0.5 million in 1958 to $5 million in 1967. Attempts to raise a long-staple variety, Pima, have not been successful so far, nor is low-grade short-staple cotton grown here. Imports cover the demand for these varieties by the spinneries, to the amount of $6 million in 1967. The farmers have overcome most of the technical problems of cotton growing. Pests are controlled by air spraying; harvesting is done with picking machines, which have mechanized all the processes involved. Technological advance has been great, especially in kibbutzim, who now control most of this field, while in earlier years, when harvesting was done by hand, most of the cotton was grown in the new moshavim (in the field-type farm unit) and on private farms. Cotton is practically the only crop which has not been limited by production quotas, and its profitability is high thanks to the Government's support policy. The price paid to producers is set, according to cost-of-production calculations, at about IL2,600 per ton. The Government subsidizes the difference between this price and that of the world market, about $550 per ton. In the past this subsidy was paid directly to the farmers, but now it goes partly to the farmers and partly to the spinneries. In addition this crop also enjoys a higher indirect subsidy for the price of the water it uses, than other crops, since cotton creates a peak demand for water in August, which determines specifications of the entire water distribution system, raising the cost of all the water supplied without these costs being charged to the account of cotton. Cotton at present utilizes 100 million m^3, 10% of all the water supplied to agriculture; at prevailing prices this water constitutes 10% of its cost of production.

4. AGRICULTURAL EXPORTS

Export of fresh farm produce has increased sixfold since 1949. In earlier years citrus was practically the only crop exported, but later on other items were developed, which now account for 20% of the total.

TABLE 11. Development of Agricultural Exports, 1949 - 1967* ($ million)

Year	Total Agricultural Exports	Citrus	Other Items
1949	18.1	18.0	0.1
1950	17.0	16.8	0.2
1951	16.1	15.9	0.2
1952	16.7	16.5	0.2
1953	22.1	21.6	0.5
1954	35.8	33.5	2.3
1955	34.2	31.6	2.6
1956	43.6	40.2	3.4
1957	54.4	48.4	6.0
1958	56.8	48.4	8.4
1959	58.1	45.9	12.2
1960	63.1	46.6	16.5
1961	62.6	40.5	22.1
1962	68.4	49.2	19.2
1963	89.0	74.7	14.3
1964	66.7	52.8	13.9
1965	86.5	71.2	15.3
1966	94.9	74.7	20.2
1967	106.0	83.7	22.3

* Calendar years.

Source: Israel's Foreign Trade (1966) — Central Bureau of Statistics.
1967 (agricultural year) — Estimate of Ministry of Agriculture.

Citrus exports have increased fivefold, but not at a uniform rate, owing to fluctuations from one year to the next, caused by changing weather conditions and prices in international markets (see above, in the section on the citrus branch). No great increase took place from 1949 until 1953. The rise was twice as fast and more between 1953 and 1957, owing to an increase in both quantities and prices. During 1957 — 62 there was only a slight quantitative increase, while prices declined, so that the volume of exports did not expand. Beginning with 1962, exports again went up at a rapid rate, owing to a rapid increase in quantities, which was the result of investment in orchards some years before.

Until 1953 agricultural exports consisted mostly of citrus. Groundnuts exports began in 1954; these did not expand greatly and amounted to $1.5 – $ 2 million a year.

Farm exports other than citrus developed rapidly between 1957 and 1961, when exports of poultry products, especially eggs, increased. Poultry product exports reached a record of about $13 million in 1961, but this has been declining ever since and totaled $8 million in 1967. As explained in the section on the poultry branch, this decline was due to the Government's policy of restricting its support in order to limit as much as possible the export of fresh eggs, as well as to marketing restrictions imposed by the most important customers, the European Common Market countries. There has been a change in the composition of poultry product exports in recent years, with a higher proportion of hatching eggs, chicks and breeding stock, which are more profitable to the national economy, and less fresh eggs exported.

The export of raw cotton began in 1962, when output began to exceed the capacity of Israel's spinneries. Encouraged by support from the Government budget, this export increased gradually and in 1967 it had reached $5 million.

Other items, such as fruit, vegetables, melons, flowers and seeds, have a considerable export potential, since Israel enjoys relative advantages in their production. However, their export expanded very slowly and reached only about $6 million in 1967. There were many reasons for this: a lack of knowledge about foreign markets; lack of know-how in the transportation of perishables over long distances; the attitude to export as a solution for incidental surpluses; the fact that varieties and types available here did not meet the customers' specific demands; problems of organizing exports and the preparation and packing of the produce. Recently the Government has begun to encourage such exports through incentives and fairly extensive direct activities. It is to be hoped that this will have positive results in coming years.

Exports constituted the greater part of citrus production — from 65 to 80%, according to the percentage of fruit suitable for export. In other branches of agriculture, except for specific products like eggs, bananas, and cotton, exports only accounted for a very small percentage, although this has been rising for total agricultural exports other than citrus from nothing to 5%. On the whole, about one-fifth of farm output is exported; this has shown no tendency to rise, but has only fluctuated from year to year.

As agricultural production is carried out by a large number of farmers, the produce must be exported by central bodies. This is done by production and marketing councils for citrus, poultry products, cotton and groundnuts; other farm exports are handled by the Agrexco export corporation, which was set up for this purpose with Government initiative and support.

TABLE 12. Portion of Exports in Agricultural Production, 1949 – 1967

	1949	1954	1959	1964	1967
Agricultural output (IL million)*	274.2	585.5	1012.2	1407.9	1667.0
Agricultural exports (IL millions)**	54.0	107.4	174.3	200.1	316.0
Exports, as percentage of output	19.7	18.3	17. 2	14.2	19.0
Citrus output (IL millions)*	79.7	137.5	171.7	245.1	304.1
Citrus exports (IL millions)**	54.0	100.5	137.7	158.4	251.3
Citrus exports as percentage of output	67.8	73.1	80.2	64.6	82.6
Other agricultural output (IL million)*	194.5	448.0	840.5	1162.8	1362.9
Other agricultural exports (IL millions)**	–	6.9	36.6	41.7	66.9
Other agricultural exports, as percentage of output	0.0	1.5	4.4	3.6	5.1

* In terms of 1966 prices.

** Computed by multiplying export earnings, in dollars, by the 1966 exchange rate of IL 3 = $ 1. It should be noted that computation on this basis involves a certain extent downward distortion. For most items other than citrus the effective rate is higher, owing to the various support payments.

5. INVESTMENTS AND CAPITAL STOCK IN AGRICULTURE

The great expansion in farm output with modest increases in the number of persons employed in agriculture was made possible by extensive capital investments.

Between 1950 and 1967 some IL3,000 million, in terms of 1966 prices, were invested in agriculture, as well as IL1,400 million in the supply of water, for which agriculture is the major customer, using about 80% of the available water throughout the period reviewed. Thus, farming accounted for about 14% of all the investments in the economy; together with an 80% share of the investments in water supply, this amounts to 20% of the total (see Table 13).

TABLE 13. Gross Investments in Agriculture and in Water Supply, 1950 – 1967 (in terms of 1966 prices, IL millions)

Period	Agriculture (total)	Composition of investments in agriculture						Water supply (total)	Total investments in the economy	Percentage of total investments	
		Orchards	Livestock	Machinery and equipment	Farm buildings	Irrigation networks	Afforestation and land amelioration			Agriculture	Water supply
Total 1950–1967	3,006	696	193	639	526	388	566	1,416	21,195	14	7
1950–1954	628	118	58	137	133	119	54	405	3,458	18	12
1955–1959	1,056	246	91	155	212	148	203	266	4,810	22	6
1960–1964	894	234	34	217	130	89	190	526	7,859	11	7
1965–1967	428	98	10	130	51	32	109	219	5,068	8	4

Source: Economic Planning Authority.

This volume of investments became possible through the allocation of funds from public sources, a large part of which was financed by the Jewish Agency out of contributions by world Jewry and the remainder coming from the Government's Development Budget. Public sources covered more than three-fourths of all investments in agriculture and water supply.

It is possible to differentiate between various periods in respect to investments in agriculture. Investments amounted to IL125 million, on the average, each year of the first five-year period, and, in addition, IL80 million a year in water supply, all in terms of 1966 prices. Agriculture was given priority over other branches of the economy, and investments far exceeded its contribution to the National Product. It was a period of extensive settlement, and in order to absorb large numbers of new immigrants each settler was allocated, in addition to the land, only a minimum of capital. A large portion of the investments, used for citrus and fruit tree plantations and the import of machinery and equipment from the United States, was financed out of a loan by the Export-Import Bank. Favorable loan terms, and also the relationship between labor and capital costs caused by the low exchange rate as against the rising wages, constituted a powerful incentive towards mechanization, mostly based on imported equipment.

During the second five-year period it became possible to complete the investment in farm settlements as capital became somewhat more easily available and the settlers had gained experience, enabling them to control more capital assets. Total agricultural investment rose to about IL210 million a year, in terms of 1966 prices. As investments in water supply declined, the total investment in farming plus water remained at approximately the level of the previous five-year period.

Investments declined somewhat during the third five-year period, when farm development slowed down, but it still continued at the rate of IL 180 million a year. Investments in water supply, on the other hand, rose considerably, as the National Water Carrier was built. During this period the process of raising capital-intensiveness in agriculture was especially pronounced (see Table 1), owing to the substitution of capital for labor, especially unskilled, through investment in machines and equipment, and also owing to the expansion of capital-intensive branches of farming, such as orchards. As this was a period of extensive capital investments throughout the economy, the relative share of agriculture declined. During the last three years, investments in agriculture dropped to IL 140 million a year, plus IL70 million a year in water supply, on the average. This was mainly the result of a reduction in the Government's development budget – an expression of the slow-down policy. Agriculture's share in overall investments continued to decline.

Gross capital stock in agriculture increased during this period about fourfold, the annual growth rate declining gradually, from 12–14% in the first decade to 8% during the third five-year period and 4% during the past few years.

TABLE 14. *Gross Capital Stock in Agriculture and Water Supply, 1950–1967** (IL millions, in terms of 1966 prices)

	Orchards	Livestock	Structures	Machinery and equipment	Total agriculture	Total water supply
1950	306.6	101.0	164.6	199.9	772.1	253.9
1954	398.4	149.1	389.1	219.5	1156.1	566.3
1959	616.7	231.1	917.3	212.9	1978.0	850.0
1964	859.1	282.1	1352.1	297.7	2791.0	1338.8
1967	976.9	291.4	1524.3	352.8	3145.4	1568.8

* At the beginning of each year.

Source: Economic Planning Authority, from Dr. E.L. Gaathon's figures.

Capital in the form of structures increased considerably, including farm buildings, internal irrigation networks, and also land amelioration and afforestation. Its share of the total capital stock rose from 20% at the beginning of the period to 50% at its end. The value of capital stock in orchards increased more than threefold in terms of 1966 prices, while planted area increased from 355,000 dunams (almost 90,000 acres) in 1949 to 883, 000 dunams (over 220,000 acres) in 1966. The value of capital stock in livestock also increased about threefold. Livestock on Jewish farms increased from 35,000 head of cattle and 1.5 million chickens in 1949 to 185,000 head of cattle and 8 million chickens in 1966. The value of capital stock in machinery and equipment almost doubled (from $1,300 tractors and 820 combines and balers in 1949 to 12,000 tractors and 1,740 combines and balers in 1966).

IL2 of capital stock is required for each Israel pound of annual agricultural output. If water supply is included, the required capital goes up to IL2.70. This proportion has been maintained throughout the entire period, except for the first years after independence, when the relatively long period necessary for investments to mature had its influence (see Table 1).

An indication of intensification in agriculture is the considerable increase — more than twofold — in capital stock per person employed. This rose from IL13,000 per person employed in agriculture in 1950 to IL29,000 in 1967, both figures in terms of 1966 prices. In 80% of the investment in water supply is being added, corresponding to agriculture's part in water consumption, the increase is from IL17,000 in 1950 to IL40,000 in 1967 (see Table 1). The increase actually only began in 1954, and it was especially rapid between 1959 and 1964. Capital stock per person employed in agriculture is one of the highest in the economy; it should, however, be remembered that a large portion of it has a life span far in excess of the average.

6. MANPOWER AND PRODUCTIVITY IN AGRICULTURE

a) Employment

Until 1959 the number of persons employed in agriculture approximately doubled and since then it has declined slightly.

TABLE 15. Gainfully Employed in Agriculture, 1949 – 1967*

Year	Total ('000)	Percentages of total			
		Jews	Arabs	Self-employed	Hired labor
1949	58	75	25		..
1954	96	80	20	65	35
1959	120	80	20	60	40
1964	119	77	23	57	43
1967	110	76	24	60	40

* Calendar years.

Source: Employed — Bank of Israel (for 1949: estimates of Economic Planning Authority); Distributions — CBS Manpower surveys.

Most of the increase took place during the first five years, when the number of gainfully employed in agriculture increased by 50% approxim During the second five-year period the increase was smaller, about 20% During those periods, a large proportion of all new immigrants were se to farm settlements. As groups of settlers were set up by public and pr organizations, organized settlement activity continued on the existing patterns, the settlers generally being given the choice between kibbutz a moshav. Unlike in earlier periods, most of the settlers had no clear ideolog preferences for one type of settlement or another, nor did they usually have any previous experience of, or liking for, farming. They wanted as individualistic a style of living as possible, and preferred the moshav to the kibbutz. The number of moshavim, therefore, increased from about 100 in 1948 to about 300 in 1959, while kibbutzim and collective moshavi (moshavim shitufiim) only increased from about 160 to 250.

The number of persons engaged in agriculture grew to 120,000 in 19 and remained at that level until 1964, since when it has been declining slightly. The decline reflects the slower expansion of farm output, toge with growing capital intensity and productivity. As the number of all gainfully employed in the economy has been increasing at the same time, agriculture's share of the total has been falling.

Because of the nature of agricultural settlement in Israel, a large par of the farm workers are self employed: members of moshavim and kibbutzim, and owners of private farms. During the earlier years, self employed were about two-thirds of the total (though many members of the new moshavim were employed by the Jewish Agency in setting up their ow settlements, and their status at first was actually that of wage earners). Later on this proportion declined somewhat, as family members began to work outside their own farms and wage laborers came to be employed in seasonal and unskilled jobs, despite the settlements' ideology of personal labor. During the recent years of economic recession the trend has been towards a slight increase in the proportion of self employed, owing to the return of family members who lost their outside jobs.

Kibbutz farmers are about one-fifth of all persons working in agricultu and farming provides about 40% of all the jobs on kibbutzim, the remaind coming from services and industry. Moshav farmers are about one-third of the total, after having been 20% in 1956, and farming provides employment for about three-fourths of all workers on the moshavim.

After 1948 Arab farmers were about one-fourth of all persons engaged in agriculture. During the period of widespread settlement their share declined to about one-fifth, but as their numbers remain stable, their sha is again rising, and has again reached 25%. Farming provides a large portion, about 40%, of employment in the Arab sector in Israel. Apparently half of all Arab farmers own their own farms, while the rest are wage earners. Consequently, one-third of all agricultural wage laborers are Arabs and two-thirds Jews.

b) The Skill of the Farmers

The skill and efficiency of those engaged in agriculture, especially the new settlers, have improved considerably during the period under review.

ing to the extensive training provided. Until about two years ago most this training and guidance was carried out by the Jewish Agency's gricultural Settlement Department, which was in charge of the tablishment and economic development of new settlements, employing ,000 technicians and vocational and social instructors for this purpose. addition, the Ministry of Agriculture provided professional advisers to der settlements. About two years ago all this activity was centralized in e Ministry of Agriculture's Extension Service, which employs about 0 extension officers.

Today, there are 7,000 students at the agricultural vocational secondary hools and 400 at the Hebrew University's Faculty of Agriculture, which warded academic degrees to 115 graduates last year and has a aff of 80.

At the same time agricultural research has expanded greatly. Part of is is carried out by the Hebrew University, and most of it by the gricultural Research Station, set up before the establishment of the State Israel with Jewish Agency funds, and now affiliated to the Ministry of griculture. Agriculture is unique in having comprehensive arrangements r passing on the results of research efficiently and quickly to the farmers y a network of vocational guidance and a large number of technical blications. Thanks to this, as well as to the farmers' alertness to novations, the outcome of research is applied in practice.

) Productivity in Agriculture

The rising level of skill and experience has contributed to improving oductivity in farming, on the one hand through growing labor efficiency, nd, on the other, by enabling the extensive investments to be absorbed d capital-intensity increased. This resulted in a threefold rise in output

ABLE 18. Productivity in Agriculture, 1950 – 1967 Average Annual Growth Rates (in percentages)

	1950–67	1950–54	1954–58	1958–64	1964–67
oss agricultural product*	10	16	14	6	7
Capital° and labor inputs					
(a)°°	7	10	8	8	9
(b)†	9	9	7	7	8
Labor productivity					
(a)°°	8	6	6	8	8
(b)†	9	9	7	8	7

* Computed on the basis of indices at 1955 prices.

°° Based on 40% on account of capital.

† Based on 68.4% on account of labor and 31.6% on account of capital.

urce: Calculated from figures supplied by Dr. A.L. Gaathon (except for 1967).

per worker: from IL4,730 in 1949, to IL14,610 in 1967, both figures in terms of 1966 prices (see Table 1). The rate of growth rose from about 5% a year during the first five-year period to about 6% during the second and 7% during the third and fourth (see Table 1). This rate is higher than the average for the entire economy.

Factor productivity in agriculture — the increase in products not derived from greater inputs of labor and capital — has risen since 1950 on the average by 5—6% a year, at a rate more or less uniform throughout the entire period. This rate is also one of the highest in the economy.

7. GOVERNMENT POLICY — A SUMMARY

The Government has exerted a decisive influence on the development of agriculture; its intervention has affected a number of spheres:

Settlement. Almost all activities connected with settlement on the land — direction of manpower, allocation of land and water, financing of investments — have been carried out by the Jewish Agency and the Government. In this manner these two authorities decided directly who should carry out agricultural development, where settlements should be located, and what should be the direction and the scope of their activity.

Planning. Naturally, it was necessary to prepare plans for the development of agriculture, and central long-range guiding plans for agriculture preceded those for other sectors of the economy. During the first years after independence the Jewish Agency Settlement Department had a decisive influence on planning, together with the Ministry of Agriculture, which concerned itself with older settlements. In 1952 the Joint Agricultural Planning Center was set up jointly by the Ministry of Agriculture and the Jewish Agency (now forming a part of the Ministry of Agriculture called the Agricultural and Settlement Planning and Development Center). This body prepares long range overall plans for agriculture as a whole, as well as for specific branches, regional plans, and detailed annual plans, which are submitted to the Minister of Agriculture for approval after recommendations are framed by the Agricultural Planning Board. This is an advisory body, containing representatives of the Ministry of Agriculture, the Jewish Agency's Settlement Department, the bodies active in the development of water resources and the farm settlement movements. After approval, such plans guide the Government policy on matters concerning agriculture.

Intervention in the Production System. Central intervention in agricultural production is necessitated by the special characteristics that differentiate it from other economic pursuits. First of all, its dependence on climatic and other natural conditions, such as precipitation, temperatures, pests and diseases, makes for irregularity in production, in the form of incidental and seasonal fluctuations. Secondly, farm produce is mostly perishable, and must be marketed soon after its production. Finally, the process of production takes several months, and investments mature over prolonged periods, in some instances only after years have passed. Production is fragmented among many producers, each of whom controls only a small share of total output.

As a consequence of all these factors, agriculture is slow in adapting to changes in the conditions of its activity, especially in conditions of demand. Since, moreover, farm produce — that is, food — is vital for the population, the Government regards itself as responsible and intervenes, both directly and indirectly, in various stages of agricultural production.

One method of indirect intervention is the use of import controls to secure the market for farm produce. As the exclusive importer of basic foodstuffs the Government has full control of the volume and prices of imports. Agriculture has been protected against competitive imports by the use of administrative restrictions, forbidding the import of certain commodities, and by high protective tariffs.

Israel agriculture is noted for its "federative" character, with its different organizations but, in addition, the Government has encouraged the organization of farmers on the basis of the various branches of farming, primarily as a means towards planning, and — if needed— the allocation of production among farmers. This has been done through the establishment of legally based marketing boards in all branches of farming, which enjoy financial support from the Government. These organizations are similar in nature to cartels, but they have been exempted by law from the provisions of the Law on Restrictive Business Practices.

Direct intervention in the price formation of agricultural produce is *carried out through support payments,* out of the Government budget, for various products or input items. This intervention has been extended over the years to a larger percentage of total output and a larger number of products. Table 17 presents data on the extent of this support. It must be emphasized that these are only payments out of the Government Budget; they do not include indirect supports, such as protection against competitive imports, reduction of investment capital costs, indirect support for the price of water, etc.

TABLE 17. Subsidies for Agricultural Products from Government Budgets (at current prices, in IL million)

	1954	1954	1959	1964	1966
Total subsidies for products and inputs	–	13.0	45.0	125.0	134.0
Milk and beef	–	3.5	16.7	35.2	32.1
Eggs and poultry	–	–	11.9	34.0	25.7
Vegetables and potatoes	–	2.4	7.7	11.5	9.5
Cotton	–	–	4.8	10.7	7.6
Feeding stuffs	–	4.5	–	13.7	25.5
Water (equalization fund)	–	–	1.0	6.6	15.1
Other subsidies	–	2.6	2.9	13.3	18.5
Total agricultural output	43.0	335.0	700.0	1,227.0	1,419.0
Subsidies as percentage of agricultural output	–	3.9	6.4	10.2	9.4

The Government's policy is formulated on the basis of the goals to be achieved under prevailing conditions, and changes have thus taken place in the course of time in the objectives of its intervention. During the early years the main purpose was to encourage greater production; to this end it extended subsidies designed to assure producers — even the new and inexperienced ones — of prices adequate to cover production costs, or to lower the cost of means of production. Another purpose was the maintenance of low retail prices for food. In most instances elements of both objectives were combined in each subsidy.

When production increased and reached a volume which frequently exceeded the market's absorptive capacity, Government policy shifted the emphasis from the expansion of branches of farming to limiting their growth. As the trend towards lower profitability emerged, a growing part of the subsidies was devoted to assuring farmers of their income.

Intervention in the price mechanism has a negative side effect on the efficiency of the economy. Non-uniform subsidies generally cause changes in the relative prices of various products, which lead to the non-optimal allocation of production factors and to an apportionment of production not in accordance with consumers' preferences. This holds for subsidies in respect of both output and inputs. Subsidies may intensify the failure of production to adapting to changing conditions. Thus, payments to cover losses caused by surplus production may cause further increases, rather than decreases, in output, and subsidies designed to benefit new, and therefore less efficient, producers may reduce incentives to greater efficiency.

In recent years the Government has allocated special incentives to encourage export, in addition to regular subsidies. These incentives are designed to increase the relative profitability of income from foreign sales, to cover special expenses, and to finance investments necessary for the expansion of exports. Within the framework of these incentives, which are available to all branches of the economy, the 1967/68 Budget allocated IL 27 million for farm export incentives, and an additional IL 20 million for participation in investments in the form of grants and loans. Most of the encouragement is given for products which are believed to present profitable export prospects in the future.

B. DEVELOPMENT PLAN FOR AGRICULTURE 1967 — 1971

1. PRESENT ISSUES OF AGRICULTURE

a) Production and Marketing Potential

The output potential of Israel agriculture is far greater than the market's absorptive capacity. Since the establishment of the State many workers, and extensive productive resources have been directed to farming. While the numbers employed in agriculture have remained stable over recent years, capital investments have continued. There has been impressive progress in research, knowhow and technology, and productivity has risen rapidly. Israeli farmers are noted for their readiness to accept innovations, their initiative and their desire to expand the scope of their operations. The effect of such processes on output is cumulative and they are therefore now beginning to yield results, creating the physical possibility of expanding agricultural production to a considerable degree.

On the other hand, the possibilities of marketing farm produce are expanding more slowly. In the past, domestic sales rose rapidly, because of previous scarcities in several commodities, on the one hand, and because of the rapid growth of population and of incomes, on the other. The growth of the population, however, has slowed during the last few years, and this trend is expected to continue in the near future. It is also expected that the proportion of individual disposable income used for the purchase of farm products will decline, even if prices fall, owing to consumption pattern and the inelasticity of demand. It follows that domestic sales will not increase to any considerable extent, whether prices remain stable or decline. Israel imports considerable amounts of farm products, such as wheat and feed grains, meat, sugar and oil seeds, and theoretically these could be replaced by local products, thus expanding total farm output. The fact is, however, that the Israeli economy cannot produce these commodities at competitive prices; in fact, some of the existing local production should be economically replaced by imports.

Thus the export of farm produce seems to be the only possible outlet to the problem of expanding output. In this respect there are, however, certain limitations, which will be discussed in detail below, and considerable efforts are needed to promote exports of agricultural products. Though a considerable expansion may be expected in the export of those farm products in which Israel enjoys relative advantages, this can be only of limited importance in comparison with total agricultural output, and insofar as these efforts are successful, the results will be perceptible only in the more distant future.

b) Terms of Trade

The terms of trade — that is, the relationship between the prices of farm products and those of production inputs — determine, together with changes in productivity, the scope of agricultural production (and the level of farmer income).

The experience of other countries proves that in the process of growth, the terms of trade tend to change to the disadvantage of agriculture (when t market is allowed to operate freely) because prices of farm products do n change to the same extent as industrial and services prices. In Israel, the terms of trade for agriculture are not determined in the open market, but are subject to the policy of the Government which intervenes in the determi nation of the prices of agricultural output as well as of inputs. Neverthele the sàme phenomenon was apparent here, as mentioned above.

This trend may be expected to continue in the future owing to likely developments in the prices of both inputs and output. A relative decline may be expected in output prices because of competition with countries with low costs of production. Protection of the local market against competitive imports will have to be reduced as the result of the renewed contact with th administered areas, the general liberalization of world trade and the desire to establish close ties with trading blocs like the European Common Mark Certain developments may be predicted in regard to individual commodities, in addition to the overall trends. Because large orchard areas have been planted in recent years, fruit supply will increase beyond the market's ability to absorb it at present prices, and these will decline. Lower prices are also likely for exports of citrus fruit and other produce: in those of citrus, because of world market developments, and in respect of other items, because of the expansion of Israeli exports and the need to sell them during less favorable seasons and in less favorable markets. It may be assumed, however, that export incentives will balance at least part of these price drops.

As for input prices, the outstanding factor of Israeli agriculture is water. During recent years, maximum exploitation of conventional sources of water has been approached. As development advanced, utilization progressed from cheaper to more expensive sources, and this trend may be expected to continue. (See CH. 10.) At current prices of irrigation water, subsidized to a considerable extent by the Government, the use of water constitutes only some 10% of purchased inputs, and some 5% of all inputs, so that it is not a major factor at present. The planned development of water resources, however, will considerably raise the cost of its supply. Since water is an essential factor of production in an arid country like Israel, water-price policy is of vital importance. It is not water itself that is the limiting factor in the development of Israeli agriculture, but the cost of supplying it and the capacity of agriculture to pay this price (or the readiness of the rest of the country to subsidize the supply of water to agriculture).

Changes in the agricultural terms of trade mean changes in the relationships between prices. The Plan for 1971 takes into consideration those changes which can be foreseen, but changes in the level of farm output prices, in comparison with other price levels in the economy, could not be estimated in advance, and the existing relationship has therefore been assumed.

c. Structural Problems

Israeli agriculture has mostly been based on mixed farming, which was suitable to pre-State conditions in respect of the lines of production as well as in respect of the volume of work a farmer could handle himself at the technological level of that time. Changes in conditions and objectives, as well as technological progress, call nowadays for an increase in the scope of farm activity as well as greater efficiency through specialization in only one or a few branches of agriculture. Kibbutzim have shown adaptability in specialization as well as in the transition from farming to other occupations, such as industry and services. Moshav family-farms, however, are less adaptable. Such farms have to be amalgamated, or additional investments should be made, the level of which is high in comparison with other branches of the economy. The difficulty is greatest in new moshavim settled by new immigrants. Those moshavim are usually located in areas where ecological conditions are comparatively difficult, their experience of farming is relatively limited and most of the farms have not yet received all the factors of production planned for them, from the authorities which settled them on the land and bear the responsibility for consolidating them.

The number of persons engaged in farming must usually go down, in order to keep up with changes dictated by economic growth. This is a problem well known throughout the world. Most of the developing countries face the problem of underemployment in agriculture, aggravated due to the difficulty of transfer from one occupation to another. In Israeli agriculture the full severity of this problem is not expected to be felt in the near future, but in the long run it is inescapable. The conclusion to be drawn from this is that, even now, institutional arrangements which tend to increase immobility should be avoided; on the contrary, efforts should be made to gradually eliminate existing arrangements which are liable to interfere with adaptation in the future. This refers to the policies by which means of production are allocated, production quotas assigned, subsidies set and the determination of prices influenced.

2. OBJECTIVES OF AGRICULTURAL PLANNING

The Agricultural Development Plan 1967—71 was prepared by the Ministry of Agriculture,[1] in accordance with general objectives in the development of the economy. The main objectives which are especially meaningful for agricultural planning are: continued rapid growth of the national product; reduction of the trade gap; balanced regional dispersal of the population. Also significant for agriculture are the objectives of greater efficiency and productivity, a rise in the level of general and vocational education, and reduction in inequality of incomes.

a) Growth of the Agricultural Product

Achievement of this objective necessitates efficient utilization of the resources at the disposal of agriculture, or, in other words, selection of the optimal production program, which should lead to specialization, based on the specific local and regional conditions of different producers.

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[1] Based on the "Five Year Plan for Development of Agriculture 1966-67 — 1970-71" — Prepared by the Agricultural and Settlement Planning and Development Center and published in August 1966.

In order to raise productivity the Plan will encourage structural changes in agriculture, including an increase in the size of the agricultural production unit, further specialization by region and farm, and greater cooperation between farms on a regional basis in order to streamline and cheapen services needed by agriculture. In addition, further technological progress will be applied to production through the development of extension services and agricultural training.

The Plan must be in keeping with the preferences of local consumers and assume a steady and constant supply of produce, reducing fluctuations in supplies and prices, for both producer and consumer. To this end, the system of subsidies and the policy in setting prices by administrative means should be changed, so that present distortions in relative prices may be gradually eliminated.

The optimal production program must exploit the advantages inherent in foreign trade. One of the yardsticks by which it may be checked is the price of each dollar saved by replacing imports or augmenting exports.

b) Reduction of the Trade Gap

In order to enhance agriculture's contribution to export, resources will be applied to the production of those items in which Israel is internationally competitive. This will necessitate an increase in the profitability of exports in comparison with production for the local market; the concentration of research on the choice and development of varieties suitable for export; increased efforts to conquer foreign markets and introduce new products to them; improved organization of export and means of transport.

In order to assume the efficient utilization of resources, these should be applied to the production of import replacements only in those instances where production costs in Israel are on an acceptable level.

c) Regionally Balanced Dispersal of the Population

The Plan aims at maintaining the present number of persons employed in agriculture in existing settlements and helping in the consolidation of weaker settlements and farms, especially in the hills and the South.

In order to stabilize, and perhaps even enlarge, the rural population the Plan proposes to help in the establishment of village centers, regional services and industrial enterprises in the villages in various part of the country. This will also result in more efficient services to agriculture.

Taking into account estimates of the surplus production potential, additional settlement on a limited scale — in areas where it would be expedient from the security and political point of view — was taken into consideration.

d) Reduction in Inequality of Incomes

A large portion of the farm population have relatively low incomes. This applies to the newer settlements, especially those in the more difficult regions, such as the hill areas and the Negev, as well as to minority villages. Farms in these areas have not yet reached the full scope planned for them; in some of them there is disguised unemployment, and the settlers are not fully skilled. As a result, there is a gap between the incomes of farmers in new and established villages, which is also the cause of the gap between the average per capita income in agriculture and in other sectors. These farms will progress through additional investment and increased productivity.

Because the expansion of agricultural output will be limited, total income will have to be complemented by non-agricultural occupations. The establishment of regional enterprises and industry in the villages is expected to improve incomes.

The Government also uses subsidies to regulate the level of incomes in agriculture. Policy in this field must aim at supporting those weak producers whose incomes the State is interested in augmenting and denying support to those with a reasonable income level. At the same time, the method used should not discourage beneficiaries from increasing efficiency. As subsidies have a distorting effect, these should be replaced, as far as possible, by direct support for incomes such as subsidies for municipal expenditures, or by methods that do not cause distortions.

3. AGRICULTURAL OUTPUT

a) Total Growth of Farm Output

The five-year plan visualizes a 40% expansion, in real terms, of current farm production between 1966 and 1971: an average yearly expansion of some 7%. If 1967 — a normal year — is taken as the base (there was a drought in 1966), the average annual rate of growth is about 5% (see Table 16).

The growth rate of agricultural output has been declining ever since the establishment of the State. During the first five-year period, 1949—54, farm production expanded, in terms of 1966 prices, at an annual rate of 16%. During the second five-year period the rate was 12% a year. During the third period, 1959—64, it went down to 7%, and during the three years 1965 to 1967, to 5% a year. (The trend, however, is not uniform, and fluctuations in the growth rate have taken place from one year to the next.) The growth rate projected for the future thus constitutes a continuation of the trend during the last years.

The Five-Year Plan for the development of the Israel economy envisages a total annual growth rate of 7% in the total output taking 1966 as the base, or of 9% beginning in 1967. Farming will expand at a slower rate for reasons mentioned above, and the share of agricultural output and product will, therefore, decline.

b) Composition of Output

The general outline of the production plan for 1971 is as follows:

Cattle. Milk production will expand as the demand for fresh milk and liquid milk products goes up. Increasing demand for hard cheeses and butter will be supplied by imports, as local production is not economically justified. Meat production will increase somewhat, in consequence of the increase in the dairy herd. The raising of beef cattle will not be able to meet growing demand, necessitating an increase in imports.

TABLE 18. Agricultural production*: 1966, estimate for 1967, and plan for 1971**

	1966 (current prices)		1967† (1966 prices)		1971†† (1966 prices)		Percentage increase by 1971	
	IL million	%	IL million	%	IL million	%	from 1966	from 1967
Total	1422.0	100.0	1607	100.0	1980	100.0	139.2	123.2
Field crops	209.8	14.8	276	17.2	310	15.6	147.7	111.1
Cereals and roughage	99.4	7.0	153	9.5	160	8.1	161.0	104.6
Grains and legumes	46.8	3.3	100	6.2	90	4.5	192.3	90.0
Roughage	52.6	3.7	53	3.3	70	3.6	133.1	132.0
Industrial crops	110.4	7.8	123	7.7	150	7.5	135.9	122.0
Cotton	63.4	4.5	75	4.7	90	4.5	142.0	120.0
Other industrial crops	47.0	3.3	48	3.0	60	3.0	127.6	125.0
Vegetables, fruit and n.e.s.	334.6	23.5	364	22.7	495	24.9	147.9	136.0
Vegetables and fruit	318.7	22.4	348	21.7	450	22.7	141.2	129.3
Vegetables and gourd crops	153.9	10.8	155	9.6	205	10.3	133.2	132.3
Fruit	164.8	11.6	193	12.0	245	12.3	148.7	126.9
Other farm crops	15.9	1.1	16	1.0	45	2.2	283.0	281.3
Citrus	264.3	18.6	304	18.9	420	21.2	158.9	138.1
Livestock	613.3	43.1	663	41.3	755	38.3	123.1	113.9
Livestock, other than poultry	321.0	22.6	341	21.2	400	20.4	124.6	117.3
Cattle	224.6	15.8	245	15.2	285	14.6	126.9	116.3
Other livestock	96.4	6.8	96	6.0	115	5.8	119.0	119.8
Poultry	292.3	20.6	322	20.0	355	17.9	121.4	110.2

* Excluding production for investments.

** This, and all the other tables in this chapter refer to agricultural years, beginning October 1 of the previous year and ending September 30 of the year stated.

† Estimate. †† Plan.

Poultry. The expansion of the poultry industry will be limited to the anticipated increase in local demand while export of eggs, which is not profitable, will be limited. Exports of breeding stock will expand.

Citrus. A considerable expansion of output and of exports may be expected, as newly planted groves come into production. Further planting will depend on the expected prices for citrus in the world market.

Fruit. Fruit production will increase rapidly, as the result of past plantings. Most of the crop will be marketed locally. Of subtropical varieties suitable for export, that portion of the crop which meets export standards and requirements will be sold abroad. The total orchard area will be increased somewhat, in order to expand future exports and to supply local demand during the 1970's (at prices lower than now).

Vegetables. Production will be expanded for the local market in order to satisfy anticipated additional demand. Export of both fresh and preserved vegetables will be expanded considerably. Storable vegetables like potatoes and onions will be exported some seasons and imported in others, in keeping with Israel's relative advantages.

Field crops. As no suitable additional lands are available, no considerable expansion of unirrigated field crops (grains and legumes) is to be expected beyond the present level during a year of average rainfall. Roughage crops will expand as livestock, especially dairy cattle, increases. The development of irrigated industrial crops, including grains, depends on the water available after all other needs have been satisfied, and will depend on their relative profitability to the national economy. The water available for agriculture will increase only slightly by 1971, by about 1% annually, and all of this increase will actually be needed by other farm branches. It is, however, expected that certain quantities of water will become available as fish ponds contract, which will make it possible to add some irrigation water for the expansion of industrial crops, mainly in cotton.

The above lines of development will be reflected in the rates at which the different branches of agriculture will expand. The highest growth rate will be that of citrus — nearly 10% per year on the average; production of other fruit will grow at an annual average rate of approximately 8%, compared with 1966. In vegetables, industrial crops and fodder crops the expected growth rate will be about 6% a year. The production of grains will not increase in comparison with 1967 (when rainfall was normal, which makes it a suitable basis for calculating the output of non-irrigated crops).

Livestock will expand less rapidly than crops, cattle at an annual average rate of about 5%, and poultry and other livestock by about 4%. Because of differences in the rates of growth, the relative weight of the various branches of agriculture will change slightly. Citrus will increase its share of total agricultural output from 18.5% in 1966, to 21% in 1971, and other fruit from 11.5% to 12.5%. Livestock will decline; poultry from 20.5% to 18% and cattle from 16% to 14.5% (see Table 18).

It should be emphasized, that these outlines of future development do not yet take into consideration possible short — or long — range ties with larger trading areas, such as free trade with the administered areas, or affiliation to the European Common Market.

Free trade with Judaea, Samaria and the Gaza area is likely to have an influence on both the composition of Israeli agriculture and its total scope. It may be assumed that these areas enjoy advantages in those branches, such as fruit and vegetables, in which labor constitutes a major component of the production costs, owing to their low standard of living. Free trade may lead to a contraction of vegetable growing in Israel within a short time, and in the longer range to a similar development in fruit production, where response is less elastic, because of the capital invested in orchards. In other sectors — citrus, cattle, poultry, industrial crops and grains — no significant influence is to be expected, and certainly not within the next five or ten years. Where the total volume of Israel agriculture is concerned, it may be possible to shift from some branches to others, but in general, it can be assumed that farming in those areas will compete with Israeli farming. The nature and severity of the influence exerted by those areas will, of course, depend on the nature of the ties to be established, and on the Government's price and customs policy; it is, therefore, difficult to say any more about this influence at the present time.

Two opposite trends would come into operation should Israel affiliate with the European Common Market. On the one hand, this would facilitate expansion in those branches which will be able to export under more favorable terms; on the other hand, agriculture here would be laid open to competitive imports and since there are products which cost more to produce in Israel, it will become impossible to go on producing them. It seems, however, that, since the Market's farm policy has created something of a 'cushion' to protect the less efficient branches of agriculture in the member countries, Israeli agriculture might also find 'living space' behind this protective wall, so that its total volume might not have to be reduced.

If Israel affiliates, and agriculture has to adapt itself, certain structural changes will become mandatory. It is difficult to predict the extent of these effects without knowing the nature and conditions of affiliation, especially in reference to agriculture. It may already be foreseen that it will become more profitable to grow grain crops locally than to import them, because grain prices in the Common Market have been set above those prevailing in the world market. However, this means higher feed prices and, consequently, lower profitability in dairy farming and poultry. Flower, vegetable and fruit exports will enjoy preferred status, and thus become more profitable. It is difficult to predict which branches are likely to be injured, but it may be assumed that these will be connected with less perishable items, such as certain fruits and vegetables, milk products and certain other animal products. An affiliation will also have effects on price relationships and price levels, thus influencing the value of output and incomes in the farm sector.

c) Output, by Branches of Agriculture

Poultry

Local demand for poultry products has in the past risen rapidly, consumption reaching some 400 eggs and about 30 kilogram of chicken per capita a year. This is one of the highest levels of consumption in the world, and even with a rising standard of living it cannot be expected to rise much further. Projected demand for 1971 is 1,200 million eggs and 100,000 tons of poultry.

In the past it was necessary to export large quantities of eggs, in order to find markets for an output which had grown faster than local demand. Such export was not profitable to the national economy, and its terms have now deteriorated further, as many markets, such as the E.E.C., are closed and low prices prevail in others. It has been estimated that in 1971 it will be possible to export without loss 50 million eggs, about as much as the occasional seasonal surpluses that may be expected.

Israel's success in developing high-quality breeds, known for high egg production and rapid gains in weight, as well as in feed utilisation and control of disease, makes it possible to export hatching eggs, day-old chicks and breeding stock, which are expected to total $ 3.5 million in 1971, compared with $ 2 million in 1967. There will be a certain shift from hatching eggs to breeding stock, where the added value is greater because of the knowhow involved.

The demand for goose liver exports is practically unlimited; the only limitation is the demand for the by-products, i.e., goose meat. The export forecast for 1971 is 150 tons of goose liver, compared with 48 tons in 1967.

The poultry industry's output is expected to rise by 20% by 1971, that is, by an annual average of 4%. This is lower than the growth rate for all of agriculture, and consequently this branch's relative weight will decline.

TABLE 13. Composition of poultry branch output: 1966, and plan for 1971

	1966		1971	
	Quantity	Value IL million	Quantity	Value IL million
Total		291.9		366.0
Eggs*	1.131*	110.4	1.237*	130.8
Poultry**	81.9**	148.4	108**	190.9
Hatching eggs*	102*	27.6	120*	33.4
Miscellaneous		5.5		10.9

* Million units.

** Thousand tons.

Source: 1966 – Central Bureau of Statistics; 1971 – Ministry of Agriculture, Agricultural Planning Center.

Since no region offers any particular advantages for the poultry industry, the plan proposes to reserve it for hill and new settlements, where alternative branches cannot easily be introduced. This will be effected through the allocation of production quotas. As it is desired to distribute production among a large number of small producers, no growth in the scope of activity of individual farms is to be expected. Productivity, however, will continue to rise, in accordance with the trend of recent years. Farms are expected to specialize in either laying hens, broilers or breeding stock.

Cattle and Sheep

Per capita consumption of fresh milk has remained stable in recent years, in spite of the rising standard of living, and no change is to be expected in this respect in the near future. The demand for certain milk products, however, is more elastic. The total consumption of milk will rise, accordingly, in terms of fresh milk, by 1971 to 490 million liters, compared with 400 million in 1966. [1]

Meat is the food product with the most elastic reaction to rising income. By 1971 consumption is expected to total 140,000 tons of beef, and 20,000 tons of mutton and other meat, compared with 90,000 and 15,000 tons, respectively, in 1966.

Domestic demand for cattle and sheep products has been satisfied partly by local output and partly by imports. Present and projected conditions of production in this industry cause a variability in the profitability to the national economy of the various products.

Since, practically spreaking, there is no substitute for local production of fresh milk and soft liquid milk products, the plan assumes that the entire local demand in these products will be covered by local pròduction in 1971. In respect of hard cheeses and butter the situation is different. Except as by-products their production in Israel is not economical, and therefore it is proposed that all additional demand for them be supplied by imports. Insofar as meat is a by-product of the dairy industry, its supply is governed by the growth of the dairy herd. In addition, calves of the milk herd are fattened, and sheep and beef cattle are raised on natural pasture. Though the latter is more advantageous than raising beef cattle on fodder, it is limited by the areas suitable for grazing. Raising calves from local herds is profitable to the national economy, but importing them from abroad for the purpose is not. In other words, the size of the dairy herd determines the upper limit of economical local meat production.

There has been rapid progress in the dairy industry, which may be expected to continue in the future. Milk yield per cow, even now the highest in the world, is going up, thanks to constant selection and improvement. Feed utilization is improving, and the composition of the feed is changing to more concentrates instead of green fodder. Since economies-of-scale in cattle raising, the trend towards larger dairy herds, both in the moshav family-type farm and in the kibbutz farms, is expected to increase efficiency in this field. There have also been technological advances in feeding and output in sheep breeding, and this trend can be expected to continue.

Total output of the cattle and sheep industries is expected to go up by approximately 30% by 1971[1], from IL 225 million in 1966 to IL 290 million, in terms of 1966 prices — an annual growth of 5%. As this about equals the total expansion of agriculture, this branch will maintain its relative weight. The composition of local output, in 1966 and 1971 , is detailed in Table 20 and that of exports in Table 21.

This branch of farming can, in effect, export knowhow accumulated here. It is, therefore, planned to export 4,000 heifers and 1,500 sheep (compared with 660 and 210, respectively, in 1967) and breeding stock.

[1] Note. After completion of this plan it transpired that milk and milk product consumption had not gone up in 1967; 1971 demand is, therefore, likely to be below 490 million liters, and it will be necessary to reduce production plans accordingly.

TABLE 20. Composition of cattle and sheep branch production: 1966, and plan for 1971

	1966		1971	
	Quantity	Value IL million	Quantity	Value IL million
Cow's milk	348,600*	130.8	418,000*	157 †
Beef	28,200**	83.8	41,300**	123
Sheep's milk	45,000*	19.3	55,000*	25
Mutton	7,250**	19.5	9,800**	26

* Thousands of liters.

** Tons.

† See note on page

Source: 1966 — Central Bureau of Statistics; 1971 — Ministry of Agriculture, Agricultural Planning Center.

TABLE 21. Import of dairy products and beef; 1966, and plan for 1971 (in tons)

	1966	1971
Dairy products:		
Powdered milk	4,000	4,000
Butter	140	4,500*
Cheese	190	*
Beef (live weight)	65,000	100,000

* In terms of butterfat, total imports of butter and cheese will equal 3,750 tons, equivalent of 110 million liters of fresh milk. It is impossible to predict the relative quantities of the two commodities. If all the imports consisted of butter, they would total 4,500 tons.

Source: 1966 — Central Bureau of Statistics, Food Balance Sheet (less changes in stock on hand); 1971 — Ministry of Agriculture, Agricultural Planning Center.

Citrus

As output during the next five years has already been determined by the area of orchards planted, it is possible to predict production during 1971. This forecast takes into consideration an increase in productivity, which is already high, and which will result in higher yields, and better harvest and packing methods. Production is expected to rise by about 10% a year, i.e., more than any other branch of farming, and the citrus industry's relative weight will therefore increase. In terms of 1966 prices, 1971 output will be worth approximately IL 420 million, compared with IL 265 million in 1966 (see Table 18)

TABLE 22. Citrus production by varieties: 1966, estimate for 1967, and plan for 1971 (in thousands of tons)

	1966	1967	1971
Total	905	1,060	1,430
Shamoutti (Jaffa)	516	616	796
Valencia	122	142	224
Grapefruit	185	222	288
Lemons	38	41	58
Miscellaneous	44	39	64

Source: 1966 — Central Bureau of Statistics; 1967 — Report of Citrus Marketing Board; 1971 — Ministry of Agriculture, Agricultural Planning Center.

Most citrus fruit and citrus products are exported. The quantity of fruit suitable for export may be expected to increase by 52 % between 1966 and 1971, approximately 9 % a year — or, with 1967 as the base year, by about 7%.

TABLE 23. Destination of citrus fruit: 1966, estimate for 1967, and plan for 1971 (in tons)

	1966		1967		1971	
	quantity	%	quantity	%	quantity	%
Total	904,550	100.0	1,096,000	100.0	1,430,000	1000
Export	579,950	64.1	678,400	61.9	884,000	618
Local consumption	108,850	12.0	109,000	9.9	139,000	97
Industry	214,700	23.7	308,600	28.2	407,000	285
Surplus	1,050	0.2	—	—	—	-

Source: See Table 22.

It seems that the marketing possibilities (in physical terms) to Europe, Israel's main market, will not cause any problem. Except for grapefruits, Israel is not the main supplier although it is an important supplier to Europe. The major problem is that of the prices that will prevail in the international market in 1971. Surveys prepared by the U.N. Food and Agriculture Organization during the early 1960's predict considerable increases in fruit supply from all the exporting countries, especially those in the Mediterranean basin. As this will not be accompanied by a paralel expansion of demand in Europe, a decline was forecast in orange prices by 20 % or more, and an even steeper fall in prices of grapefruit. This trend was not perceptible during the first half of this decade, so that it becomes difficult to evaluate future developments. The citrus industry's income will also decline owing to restrictive measures — high customs duties (20%) and reference prices — effected by the European Common Market. These affect prices directly, and also indirectly by diverting Israeli exports to countries outside the Common Market. Estimates of citrus exports thus vary from $115 million, on the assumption of stable prices and $ 90 million on the most pessimistic assumption that prices will drop from $ 125 to $ 100 per ton.

Local demand for fresh citrus is already high, about 40 kg per capita per year, and it will increase by only about 5%. Industry will have to absorb all the fruit which is not suitable for export and cannot be sold fresh locally. This quantity will increase by 35% between 1967 and 1971. At present the processing industry has excess productive capacity, and it will be able to process the additional quantities of fruit with practically no additional capital investments.

A decline may be expected in the prices of citrus preserves owing to stiffer competition in export markets. This may cause a drop in the canning industry's profitability, unless greater efficiency is achieved. Citrus preserve exports are expected to total $ 35 million (see chapter on Industry).

Planning is of paramount importance in evolving a policy governing additional plantings, because investments in this field ripen slowly, making it necessary to forecast the degree of profitability to the national economy. Since few areas suitable for citrus plantations are left, and it is uncertain what prices will be obtained in the future, the Plan proposes to enlarge the overall area of citrus orchards from 453,000 dunams in 1966 to 468,000 dunams in 1971 — an addition of about 15,000 dunams, 5%. This may be considered as a minimum plan, which may possibly be enlarged as time passes.

Fruit Orchards

As with citrus, supply of fruits in 1971 has already been determined by the areas already planted, which will bear fruit by then. Planting has continued at a rapid rate during the last few years, especially of deciduous and sub-tropical fruit trees. Production may therefore be expected to go up rapidly in the next few years: from IL 165 million in 1966 to IL 245 million in 1971, an average increase of 8% a year.

TABLE 24. Fruit production: 1966, and plan for 1971 (in tons)

	1966	1971
Deciduous fruit — total	116,550	174,000
Apples and pears	84.500	123,000
Peaches, plums and apricots	30,400	47,000
Other fruit	1,650	4,000
Table grapes	42,700	41,000
Wine grapes	33,320	44,000
Bananas	53,900	53,000
Subtropical and other fruit	15,710	32,000
Avocado	2,300	10,000
Olives	10,900	16,000

Source: Ministry of Agriculture, Agricultural Planning Center.

The expansion of total supply is accomplished by a lengthening of the seasons for each fruit, achieved by the development of early and late ripening varieties, as well as of storable varieties. Productivity may be expected to rise, owing to improvements in knowhow, in the selection of varieties, and in the care and tillage of the orchards. Yield per unit of planted area will rise. Labor input per unit of area and of output will go down considerably.

The population increase and the rising standard of living will enlarge local demand for fruit, which is relatively elastic in response to changes in income, but prices will have to go down by about 10 %, because supply will rise considerably, from 45 to 55 kilograms per person per year.

Industry is the sole customer for wine grapes and for olives. The canning industry absorbs a part of the production of deciduous fruit for the manufacture of jams, fruit preserves and juices; as fruit production expands, larger quantities unsuitable for fresh consumption will reach the canning plants, while the local demand for processed foods will increase due to the rising standard of living. An expansion of exports of processed fruits, especially wine, is expected.

TABLE 25. Industrial processing of fruit, 1966 and plan for 1971 (in tons)

	1966	1971
Wine grapes	33,120	44,000
Olives	9,950	16,000
Deciduous fruit, etc.	8,750	20,000

Source: 1966 — Central Bureau of Statistics; 1971 — Ministry of Agriculture, Agricultural Planning Center.

Only a small part of fresh fruit output is now exported, and this will remain true for the future. Only in respect of sub-tropical and early ripening fruit does Israel enjoy any competitive advantage. Fruit exports are confined mainly to bananas, which are sold abroad thanks to price discrimination between the local and foreign markets. Because of market limitations, the export of bananas will have to contract considerably in the future. Avocado exports may be expected to expand considerably. Avocado plantations have expanded rapidly, and all the fruit of adequate quality will be shipped abroad. An increase is expected also in exports of early-ripening table grapes.

TABLE 26. Export of fruit, 1966, estimate for 1967, and plan for 1971 (tons)

	1966	1967	1971
Bananas	19,970	15,740	10,000
Table grapes	1,060	500	3,000
Avocado	960	1,620	7,000

Source: Ministry of Agriculture, Foreign Trade Department.

As with citrus, planning of fruit tree planting is important, since investments ripen only after several years and farmers tend to make decisions on the basis of current profitability.

Additional orchards could be planted of sub-tropical fruit, especially avocado, which can be exported. The plan proposes the planting of about 10,000 additional dunams of avocado, doubling the present area, and 2,000 additional dunams of other sub-tropical fruit, such as mango and anona. Furthermore, it proposes to expand by 25% vineyards suitable for the production of table wines for export, mostly in young settlements in hill areas.

Association with other trading areas — especially Judaea and Samaria, and also the European Common Market — which will facilitate fruit imports, may cause steep drops in the price of most varieties, necessitating a revision of the planting policy; in the long run, old orchards may not be replanted and it may even be necessary to uproot orchards in marginal areas.

Vegetables

Local demand for vegetables is expected to rise very little, mainly owing to population increase and only in a slight degree to greater per capita consumption, primarily of winter vegetables.

Total consumption will increase from about 280,000 tons fresh vegetables (one-third of this tomatoes), 80,000 tons potatoes and 80,000 tons melons in 1966, to some 310,000 tons vegetables, about 100,000 tons potatoes, and 110,000 tons melons, in 1971.

The expansion of vegetable production depends on export. European markets show considerable demand for fresh produce during seasons when climatic conditions make local supply impossible. Assuming that the profitability of export is improved through incentive payments, that organizational and marketing problems are solved (see discussion of this in Part 4 — Agricultural Exports), vegetable exports may reach the levels given in Table 27.

TABLE 27. Export of fresh vegetables, 1966, estimate for 1967, and plan for 1971 (tons)

	1966	1967	1971
Potatoes	9,180	4,670	29,500
Onions	1,120	430	10,000
Green peppers	1,530	1,470	6,500
Carrots	1,640	3,170	15,000
Tomatoes	120	90	2,000
Artichokes	30	210	3,000
Eggplant and marrows	100	530	3,000
Strawberries	80	150	1,000
Melons	750	730	7,000

Source: Ministry of Agriculture, Foreign Trade Department.

Thus the share of exports in relation to overall vegetable production is expected to rise. In addition there will be a large increase in the export of processed vegetables, mainly canned but also, to a certain extent, dehydrated. In 1971 industry will receive about 150,000 tons of vegetables, including 75,000 tons of tomatoes and 23,000 tons of vegetables for dehydration, compared with 50,000 tons in 1966. Most of the 1971 processed vegetables will be exported, bringing in $ 12 million.

Owing to import liberalization, small quantities of potatoes and onions will be imported during seasons when local storage costs are high in comparison with prices abroad.

Total output of vegetables will increase by about 30% during this five-year period, about 6% a year, to IL 205 million in 1971, in terms of 1966 prices, compared with IL 155 million in 1966 (see Table 18). A large portion of the increase will consist of out-of-season varieties, both for local and foreign sale, raised in hothouses or under plastic coverings.

Technological improvements, such as cultivation under protective covering, harvest mechanization, etc., will raise productivity. Yield per unit of cultivated area will increase sharply, by about 50%, and the amount of water needed per unit output will consequently decrease.

These forecasts of vegetable production are based on the assumption of present foreign trade conditions. The establishment of ties with Judaea and Samaria is likely to cause considerable changes in the development of this branch of agriculture. Vegetable growing is widespread in these areas in comparison with Israel, and owing to plentiful cheap labor available there, it is liable to expand even more. Association of the two economies may lead to a contraction of production in this field in Israel, except for varieties that demand special knowhow (winter vegetables under protective cover, for instance) and those whose production here is particularly efficient.

Field Crops

Roughage

Those crops constitute input items in the raising of cattle and sheep, and their development depends on that of these branches. Output of roughage will increase during the period of this plan by about 30%. Productivity is expected to rise owing to greater yields and lower input needs; and changes are to be expected in livestock feeding methods, replacing roughage with imported concentrated feed.

Grains and legumes

Only a small portion of the wheat required for human consumption, and the barley, sorghum and corn for animal feed, can be produced locally; the rest must be imported. Most of these crops are raised without irrigation, and only a small portion under full or auxiliary irrigation. Dry farming crops include wheat and barley in the winter, and sorghum and corn, part of which is irrigated, in the summer.

Since dry farming is limited to areas in which normal rainfall suffices, and practically all of these are already under cultivation, unirrigated field crops cannot be expanded. A limited expansion of irrigated grain crops is planned, mainly of sorghum, but this will only constitute a small addition to total grain production.

Assuming normal rainfall in 1971, output of grains and legumes will reach IL 90 million (including the value of the straw) in terms of 1966 prices, as againt IL 47 million in 1966, a drought year, and IL 100 million in 1967, when climatic conditions were exceptionally favorable (see Table 18)

The economy's needs for both food and feed grains will to a major extent continue to be supplied by imports.

TABLE 28. Consumption and supply of grain: 1965, 1966, and plan for 1971 (in thousands of tons)

	1965*	1966**	1971
Wheat, for human consumption			
Consumption	385	380	470
Production	120	80	130
Imports †	265	300	340
Feed grains			
Consumption	570	620	660
Production	170	55	185
Imports †	400	565	475

* Rainy year.

** Drought year.

† Not including imports for stocks.

Source: 1965 and 1966 — Consumption and Production — Central Bureau of Statistics (Food Balance Sheets, Feed Balance Sheets, Output Destination); 1971 — Ministry of Agriculture, Agricultural Planning Center.

Industrial Crops

Industrial crops include irrigated crops, such as cotton, sugar beet and groundnuts, and unirrigated crops, such as tobacco and oil seeds, all of which are traded in the world market. Cultivation here is, therefore, worthwhile only so long as the price of the dollar earned or saved is within reason. Since the cultivation of all of them is fairly extensive, compared with other Israeli crops, irrigation water is allocated to them only after other needs have been satisfied.

It is assumed that in 1971 1,035 million cubic meters of water will be available for Israeli agriculture (see Section 8: Input Factors, and the chapter on Water). After the needs of the other branches of farming have been satisfied at the planned level of production, and after taking into consideration improved water utilization and the reduction in the area of fish ponds, some 180 million cubic meters will remain for the irrigation of industrial crops. By comparison, during 1965 — a year of plentiful rain — 150 million cubic meters were available for industrial crops. At the present relationships as determined by the Government, between prices of the various industrial crops and the charge for water, most of the available quantity (about 120 million cu. m.) will be used for cotton growing, the remainder being divided between groundnuts, sugar beet and irrigated grain crops.

Sugar beet is raised at a very high cost per dollar, and thus is not worth while from the economical point of view. Its total extent is determined by the productive capacity of the existing sugar refineries — about 300,000 tons of beets a year.

The export potential for table groundnuts is greater than the quantity which can be produced here. The price per dollar of added value is approximately IL 4. As the price for table groundnuts is higher abroad than in Israel, all the crop that is of the suitable quality — some 50 % of the total — is exported. In 1971 output will total 18,000 tons of which 9,000 tons will be exported. In 1966 output was 13,000 tons, and about 6,000 tons were sent abroad during the 1967 export season.

Cotton growing is expected to expand considerably, from 25,000 tons of fiber in 1966 and about 30,000 tons in 1967 to approximately 35,000 tons in 1971. Israeli sprinneries will need 22,000 tons of this, in addition to 5,000 tons of qualities that local farms cannot supply, leaving 13,000 tons of raw cotton for export.

For the farmers the cultivation of cotton is profitable, because the price is supported by the Government, the charge for water —15 % of direct inputs — is very low, and considerable technological advances have been achieved. Cotton is practically the only crop not restricted by production quotas. Fro the point of view of the national economy this crop is less worthwhile; even at present water prices the cost per dollar saved or earned is above IL 4, and this would be even higher if the real cost of water were taken into account. The average cost of irrigation water, which is much higher in mo parts of the country than the rates charged, is further raised by cotton cultivation because it creates peak demand during the month of August, which is the determining factor in planning water supply and distribution.

4. AGRICULTURAL EXPORTS

a) Volume and Composition of Exports

The export of fresh produce will increase until 1971 to $ 170 million (on the assumption of stable prices) compared with $ 94 million in 1966 and $ 106 million in 1967. Compared with other branches of the economy, the added value component in the export of fresh farm produce is high, around 75 % in most instances. Exports of processed farm products (see chapter on Industry) will also go up, to reach $ 50 million in 1971. The percentage of added value is lower with processed products than with fresh produce.

Detailed plans for the export of the various products were discussed in the previous chapter. The forecast of the value of export is as follows:

TABLE 29. Export and fresh farm produce, 1966, estimate for 1967, and plan for 1971 ($ million)

$	1966	1967	1971 at 1966 prices
Total	93.6	106.1	168.0
Citrus	76.7	83.7	114.0
Total, without citrus	16.9	22.4	54.0
Fruit	3.4	3.2	6.0
Vegetables and melons	2.4	1.8	15.0
Flowers and decorative plants	0.6	1.0	7.0
Cotton	3.8	5.3	8.0
Groundnuts	1.4	2.0	3.0
Eggs and goose liver	4.2	5.0	4.0
Poultry breeding stock		3.0	4.0
Other breeding stock	0.6	0.4	3.0
Seeds	0.5	0.5	1.0
Miscellaneous		0.2	3.0

Source: Ministry of Agriculture, Foreign Trade Department

The composition of exports is expected to change as the result of an increase in the relative weight of those products in which Israel has advantage owing to: 1) favorable climatic conditions for supplying foreign markets during certain seasons: flowers and vegetables in winter and early spring, sub-tropical fruit, and early ripening summer fruit; 2) special skill, e. g., goose liver, groundnuts and cotton; 3) high scientific standards owing to research and development; for instance, poultry breeding stock, heifers and seeds. These products were defined as "preferential branches", the development and export of which will be promoted by special efforts. Exports of part of these products are only beginning, and the coming five-year-period will mark a turning point. If the efforts will prove successful, development will be rapid; therefore it is difficult to make forecasts, and the above figures should be regarded only as estimates. It must be noted that part of the measures taken to encourage exports will bear fruit only during the next decade.

In contrast with these products, exports will decline for those that are less beneficial to the national economy, such as fresh eggs and bananas.

As the "preferred branches" of agriculture expand their exports, the relative weight of Israel's traditional export product, citrus, will decline. Citrus sales will expand during this period, but to a lesser extent than other crops. As we have seen, citrus exports will increase quantitatively, but owing to the possibility of price declines, there is an uncertainty regarding the value of exports: the forecasts vary between $ 115 million if prices remain at their present level, and $ 90 million if a 20 percent price decline will occur.

b) Encouragement of Exports

Except for citrus and a few other items, agricultural exports have risen slowly in recent years. On the one hand, there was apparently no adequate pressure on the farmers, as the local market absorbed their output at reasonable prices; on the other hand, export was difficult and marketing knowhow was inadequate.

At present this situation has changed. The local market is near saturation while productive capacity is not fully utilized and farmers are able and willing to expand production. If this situation is to be utilized for the expansion of exports, an export encouragement policy must be adopted in the fields of production, marketing and foreign trade relations. For exports to become a permanent factor and not merely an occasional outlet for surpluses, the relative profitability of foreign sales must be improved. It costs more to grow crops for export than for the local market, because of more stringent demands in respect of variety, quality, sorting, delivery dates, etc. Uncertainty and risks are greater. Furthermore, expansion of exports will depend on penetration into additional, less favorable markets, and during less favorable seasons, which might mean a gradually declining profitability. In such a case, the above export program is conditional upon gradual transition to a higher level of profitability to the farmer for every dollar earned. This applies particularly to annual crops, which follow a highly elastic pattern of supply within the planning period, while market development demands years of work and advance knowledge of profitability. The supply of fruit, on the other hand, will remain fixed, but the policy adopted will have far-reaching influence on the rate of planting and on exports to be expected in the 1970's.

The present general incentive for agricultural exports is IL 0.35 over and above the rate of IL 3.50 per dollar, except for citrus, for which it is lower, and some other products, such as cotton, groundnuts and eggs, for which the present support, out of the regular subsidies budget raises the effective rate for exports. However, as the export of products for which the cost per dollar is high will decline, there will be a gradual equalization of exchange rates applicable to farm exports, which will help to equalize the conditions of production and improve the allocation of resources.

To complement the direct export incentives, agriculture receives the following aid for production conditions:

1. Development of varieties that can meet customers' demands in respect of quality, time of delivery, storability and transportability;
2. Diffusion of the necessary knowhow among farmers, through intensive training programs;
3. Supply of operating and investment capital in export branches that are especially capital-intensive, such as hothouses and sub-tropical fruit; and in the mechanization of tillage, harvest and sorting processes.

The costs of developing and expanding markets are large, and they cannot be borne only by those producers who export today. Public funds are, therefore, devoted to market research; the selection of the most favorable products and markets; the introduction of products to new markets and sales promotion by publicity campaigns and the covering of special expenses or losses involved in diverting produce to unfamiliar markets; the solution of problems pertaining to efficient and inexpensive sea and air transport; the development of better sorting methods, improved packaging, etc.

Some of these measures involve one-time investments, while others, such as publicity and market research, are continuous in nature. With the consolidation of those branches of farming to whose development efforts are now being devoted, new products will undoubtedly appear for which markets will have to be developed. It may therefore be assumed that the expansion of exports, including ever more and different products, will necessitate constantly expanding activity both in the sphere of production and of marketing.

c) Trade Relations

The natural market for Israel's agricultural exports is Europe. Part of past and future exports is directed to the EFTA nations, primarily Great Britain, another portion goes to the European Common Market, and only a small portion to other countries, under commercial agreements or otherwise.

As the European Common Market has adopted a policy of protecting the farm sectors of its member-States, a number of farm products exported by Israel are faced by high customs barriers and other import restrictions At this time, it is difficult to evaluate what effect this will have on Israeli exports and their future potential. The above stated export program took into account that Israel will be able, by some arrangement, to continue to export to the Six without being discriminated against. At the same time it is difficult to evaluate returns after deduction of customs and other imposts. Those will depend upon the type of agreement reached with the EEC.

The EFTA countries do not have a farm policy of the type adopted by the E.E.C., although bilateral treaties between EFTA members are possible, discriminating against third parties in respect of specific products. This may, at some future date, work to Israel's disadvantage. An agreement between Israel and the Common Market is even more essential in view of the possibility of Great Britain or other EFTA member-States joining the E.E.C.

5. INVESTMENTS IN AGRICULTURE

The investment program for the next five years is designed to supply the additional capital required to increase output in the various branches, to cover discard replacements, to advance farms which have not yet achieved the optimal scale of operation, and to continue specialization and capital-intensification.

These needs will call for continued investments in agriculture although no significant settlement activity is foreseen for the next five years and the rise in production is not large. During the economic slowdown of the last two years, gross investment in agriculture totalled IL 130—140 million a year, compared with IL 160—170 million (at 1966 prices) in preceding years. During the five-year period 1967—1971, investments should total some IL 800 million. Since investment in 1967 was below the level planned, totalling only IL 130 million, investment during 1968—1970 will have to make up for it. The rate of investment will slow down in the course of the period because of the slowing rate of farm development. About one-third of investments will be for replacement, only two-thirds constituting an addition to the total stock of capital.

TABLE 30. Investment Program for Agriculture, 1967—1971 (IL million, in terms of 1966 prices)

	Total	1967	1968	1969	1970	1971
Total gross investment	816	174	173	168	157	144
Discard replacement	271	57	61	51	41	41
Structures	62	16	19	13	9	5
Equipment	209	41	42	48	42	36
Total addition to stock of capital	545	117	112	107	106	103
Poultry (structures and equipment)	40	8	8	8	8	8
Cattle and other livestock	62	14	13	12	12	11
Orchards	102	30	24	20	16	12
Citrus	51	17	12	9	7	6
Other fruit trees	51	13	12	11	9	6
Vegetables and horticulture — hothouses and protective coverings	65	13	13	13	13	13
Farm machinery	31	8	7	6	5	5
Irrigation networks	37	9	7	7	7	7
Land reclamation, afforestation and drainage	125	25	25	25	25	25
Services and miscellaneous (structures and equipment)	83	10	15	16	20	22
Total gross investment derived from output	272	64	58	54	50	46
Livestock inventory	32	7	7	6	6	6
Plantations	115	32	26	23	19	15
Land reclamation, afforestation and drainage	125	25	25	25	25	25

Source: Addition to Stock of Capital — Ministry of Agriculture, Agricultural Planning Center; Replacement — Central Bureau of Statistics, computed on the basis of physical depletion and date of investment.
Note: In respect of 1967, the above investment program was not carried out; only 133 million were actually invested. The remainder, about IL 40 million, will thus have to be added in the years 1968 to 1970.

a) Investments in Various Branches

Poultry. Because of limitations on the expansion of this branch, net investment to increase output will be very limited, most of it being devoted to broilers production. Almost all of this investment will be effected in hill settlements. Gross investment in the poultry industry is thus largely devoted to replacement of discard. It should be noted that excess productive capacity exists in the older settlements along the sea coast and in the valleys because their production quotas have been reduced. This excess will continue to grow as quotas are cut even more, and these settlements will, therefore, not replace all their discard.

Dairy farming. Within the frame of effecting the investments necessary for expansion of output (about half in livestock inventory and the other half in buildings and equipment), a structural change will be made so as to concentrate dairy farming in the moshavim in larger, more mechanized units. A large portion of the investment — gross, as well as net — will therefore be effected in the family-farms. Consequently discard of the smaller dairy farms going out of business will not be replaced, and alternate uses will no doubt be found for their buildings.

Orchards. Investments in recently planted orchards will be completed up to the fruit-bearing stage and new plantings will continue at the rate specified in the plans for expansion. Half the total will be invested in citrus, most of the remainder going to subtropical fruit. Because most orchards are young, and their expected life span is long, almost no replacement will be necessary in the older plantations. Replacements will, however, be needed in respect of irrigation networks, machinery and equipment. There will also be some investment in packing houses, especially for citrus.

Vegetables. The total area under vegetables will not be enlarged, but investments will rise in hot houses and protective plastic coverings for the cultivation of vegetables and flowers. This method is exceptionally capital-intensive, and large investments will be necessary. The utilization of existing farm machinery will be improved, so that little additional equipment is needed; the only exception is new equipment for growing root vegetables. Marketing improvements and expansion of exports will call for additional investments in sorting and packing services.

Field crops. Irrigated areas will be enlarged to a certain extent, mainly in the South, that is, in Lakhish and the Negev. This will necessitate additional investments in irrigation and drainage networks, in addition to replacement of discard. Little new investment will be made in farm machinery, most of it going to replace discarded machines.

Land reclamation and afforestation. The extent of investments here is largely determined by the public funds allocated to these purposes. These will approximate IL 25 million a year, compared with IL 30 million in recent years.

b) Stock of Capital

Investments during these five years will increase the total stock of capital in agriculture by about 17%, raising it to about IL 3,700 million, as detailed in Table 31.

TABLE 31. Gross capital stock in agriculture, 1966, 1967, and plan for 1971 (IL millions, in terms of 1966 prices)

	January 1, 1966	January 1, 1967	Additional capital stock during five-year plan	December 31, 1971
Total gross stock of capital	3045	3145	545	3690
Structures				
Plantations	945	977	102	1079
Land reclamation, afforestation and drainage	550	580	125	705
Irrigation networks	928	944	37	1538
Farm buildings			249	
Equipment and livestock				
Machinery and other equipment	335	353		
Livestock	287	291	32	323

Source: Capital stock 1966, 1967 — Bank of Israel; Additional capital stock — Table 30.

c) The Financing of Investment

In the past, most of the investments in agriculture were financed from public sources and only a small portion came from the farmers' savings. In view of rising incomes, the farmers may be expected to accumulate greater gross savings. Their share in the total volume of investments will also increase, owing to replacements financed out of depreciation reserves and investments in the form of farm output. The weight of equity capital will increase during the period of the Plan, owing to larger repayments on account of loans received.

Public funds — from the Government's development budget and the Jewish Agency's agricultural settlement budget — will be allocated according to firmly established priorities and criteria. The highest priority will be assigned to the development of export crops and import — replacing crops. Next will come investments purported to effect structural changes in farm units below the optimal size and those located in especially difficult areas. A high degree of priority will also be assigned to projects which can save water; water-saving appliances, replacement of irrigation networks, drainage and soil conservation.

In recent years, institutional short- and medium-term credits have undergone a process of centralization and direction to specific purposes. Farms included in the framework of centralized credit receive from one bank all the finance they need, in accordance with a work program prepared in advance. It is planned to extend this method to the maximum number of farms, thus improving their financial structure.

6. MANPOWER IN AGRICULTURE

As shown above, farm production will increase only slowly during the next five years, while capital intensification and greater efficiency will result in improved labor productivity. In consequence, no expansion of the total labor input is forecast; in fact, a slight contraction is to be expected.

According to labor norms for the various branches of farming as estimated for 1971, the total number of man-days needed for direct farm production will be the same as in 1965 — some 21 million man-days per year. (No comparative figures are available for 1966 and 1967.)

TABLE 32. Direct labor input in agriculture by branches, 1965 and plan for 1971

	1965		1971		1971 as % of 1965
	'000 man-days	%	'000 man-days	%	
Total	21,130	100.0	20,690	100.0	98
Poultry	1630	7.7	1420	6.9	87
Cattle	1860	8.8	1910	9.2	103
Sheep and other livestock	1260	6.0	1330	6.4	106
Citrus	4820	22.8	5020	24.3	104
Other fruit plantations	4010	19.0	3890	18.8	97
Vegetables	4120	19.5	3850	18.6	93
Roughage	1040	4.9	740	3.6	71
Grain crops	1320	6.2	1180	5.7	89
Industrial crops	1070	5.1	810	3.9	76
Miscellaneous			540	2.6	

Source: Ministry of Agriculture, Agricultural Planning Center.

Because of changes in the composition of output by branches and varying rates of productivity increases, there will be slight changes in the composition by branches, of agricultural employment.

The above table refers only to direct employment. To receive the full picture the indirect labor input in services of agriculture, such as administration, should be added. Those are estimated at about one-fourth the direct labor input. It may be assumed that auxiliary services will expand relatively, as standards go up.

Some 70 to 75,000 farm workers are self-employed, while some 40,000–45,000 are wage-earners.* About 90,000 are Jews, and some 25,000 are members of the minority communities. During recent years the number of farm workers has tended to decline slightly. It may be assumed that changes have also taken place in total labor input, reflected in the number of work-days per year for each worker. This is a fairly elastic factor, both among the self-employed, where the number of work hours per day and the distribution of the workload throughout the year are not uniform, and among wage-earners, for some of whom agricultural employment is only seasonal. Among self-employed, there is, apparently, some unutilized labor potential, mainly in new moshavim and minority villages, which will increase with the growing up of the second generation. There are ideological objections to the employment of hired labor in kibbutzim and some of the older moshavim, except for seasonal work and for certain jobs which, for various reasons, are not done by the members themselves. It may be assumed that these factors will tend to increase the share of the self-employed in total farm employment. Naturally, the overall condition of the economy, the possibilities of finding alternative, non-farming employment, and the cost of hired labor as compared with the value placed by the self-employed on their own work, will also have a bearing on this issue.

It may be assumed that the total number of persons employed in agriculture will remain in the neighborhood of 110,000 as in recent years. As the total labor force expands, this will cause the relative weight of agriculture in employment to decline. It should, however, be emphasized that the relative decline in farm employment does not imply a corresponding relative decline of the rural share of total population, as some of the villagers may be transferred to occupations such as industry and services.

TABLE 33. Persons gainfully employed in agriculture, by degree of skill, 1966, and plan for 1971

	1966	1971
Total	110,000	110,000
Professional men and technicians	1,400	1,600
Skilled workers	51,900	53,500
Administration, crafts, transport	14,000	14,400
Farmers	37,900	39,100
Semi-skilled	27,100	27,500
Unskilled	29,600	27,400

Source: Manpower Planning Authority, Ministry of Labor.

General vocational standards in agriculture will rise because of technological improvements, capital intensification and transition to branches of farming which demand greater knowhow. In addition, more university-trained people and technicians will be needed for administration, instruction and auxiliary services. In 1965 it was estimated that 40% of the total direct labor input was skilled labor, and 60% semi- and unskilled. By 1971 the percentage of skilled labor will rise to 45%. A similar development is to be expected in respect of all persons employed in this sector. (See Table 33.)

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* Self-employed farmers include farm owners and members of their families employed on the farm at least fifteen hours a week. The number of wage earners is computed on the basis of the length of time each is employed in farming.

Output per person employed will rise from IL 12,900 in 1966 to IL 17,600 in 1971, an average annual increase of 7%. Such a rate is higher than the average forecast for the national economy as a whole, as it has been in the past, too.

7. INPUT FACTORS IN AGRICULTURE

a) Land and Water

The total area of land under cultivation in 1971 will remain at the present level. In the coastal area, there will be some losses due to urbanization. On the other hand, there will be small gains, mainly owing to land reclamation in the hill regions. Cultivatable dry farming areas, primarily in the Negev, depend on the rainfall from year to year, and it has been assumed that 1971 will be an average year in this respect.

The amount of water that will be available to agriculture is based upon present plans to develop conventional water resources, which will allow a small increase in the quantity available for irrigation. It is assumed that the quantity of water allocated to agriculture in 1971 will not be reduced during the 1970's and 1980's. On this basis, total annual consumption will be 1,200 million cu. m. compared with 1,100 million cu. m. in 1965 (see Table 34), a very small increase. As 1966 was a drought year, it does not make a satisfactory basis for comparison.

Special note should be taken of the difference between agricultural consumption of water and agricultural demand for water. At present rates farmers are prepared to buy much more water than has been allocated to them, since in most areas the marginal productivity of water is higher than its rate. If the price of irrigation water were to be set at its actual cost of supply, demand would contract considerably in most places. Thus far, farm development is not limited by the quantity of water itself, but by its high cost. The above consumption figures represent, not demand but rather an institutional decision. For details see chapter on water.

b) Input Purchased from Other Sectors in the Economy

On the basis of estimated needs in the various farm branches, and assuming greater efficiency in utilizing inputs, total purchases from other sectors in the economy and from imports will be as specified in Table 35.

Foodstuffs constitute a large portion of all agricultural inputs. A portion — the coarse fodder and part of the grains — is produced on the farm, but most is bought from other sectors, primarily from imports. For 1971 purchased foodstuffs are estimated at IL 260 million, in terms of 1966 prices, on the basis of planned expansion and more efficient utilization. Concentrates, however, will make up a larger portion of the feed.

TABLE 34. Land and water utilization, 1965, 1966, and plan for 1971

	1965	1966*	1971
Land ('000) dunams			
Total physical area	4,090	4,070	4,090
Total cultivated area	4,170	4,150	4,175
Dry farming	2,630	2,535	2,485
Irrigated	1,540	1,615	1,690
Total water utilization ('000 cu. m.)	1,084	(1,265)**	1,206
Sweet water for irrigation	965		1,035
Sweet water for leaching	—	4	35
Losses of sweet water	29		45
Reclaimed sewage water for irrigation	7		10
Brackish water	83		85

* Fiscal year.

** According to Water Commission, Ministry of Agriculture.

Source: Ministry of Agriculture, Agricultural Planning Center.

TABLE 35. Purchased input components; 1966, estimate for 1967 and plan for 1971, IL million (in terms of 1966 prices)

	1966	1967 Estimate	1971 Plan	Growth index from 1966 to 1971
Total of purchased inputs	526	560	670	127
Feedstuffs	215	225	260	121
Water	57	453	60	105
Packaging materials	62		95	153
Fertilizers	31		40	130
Plant and animal protection materials	18		25	139
Transportation	47		60	128
Spare parts, tools and repairs	35		45	129
Fuel, lubricants and electricity	19		25	132
Government and administration	16		80	143
Miscellaneous	26			

Source: 1966 and estimate for 1967 — Central Bureau of Statistics; 1971 — Estimates of the Economic Planning Authority.

Considerable increases are to be expected in packaging materials, especially for citrus. The use of fertilizers and plant and animal protection materials will grow parallel with the growth in output; so will the cost of transport and governmental and other services. Expenditure on spare parts, repairs, fuel, lubricants and electricity has been estimated in proportion to the growing investment in equipment, irrigation networks and farm buildings. Outlay for water, at 1966 prices, will only go up a little.

The input factors purchased from other sectors of the economy, which totalled IL 526 million in 1966 and IL 560 million in 1967, will rise to IL 670 million, an increase of 27%, by 1971.

8. PRODUCT, PRODUCTIVITY AND INCOME

According to the production plan and estimated inputs, the gross agricultural product (at factor cost) will reach IL 1,175 million in 1971, compared with IL 820 million in 1966. This constitutes an increase of 43%, about 7% a year on the average — or 5%, taking 1967 as the base.

TABLE 36. Agricultural product, 1966, estimate for 1967 and plan for 1971 (IL millions, in terms of 1966 prices)

	1966	1967	1971	Growth index from 1966 to 1971
Agricultural output (including intermediate products	1423	1607	1980	139
Less — intermediate products	133	151	180	135
Realized output (excluding intermediate products)	1290	1456	1800	140
Plus:— Production for investment	58	60	45	78
Total agricultural output	1348	1516	1845	137
Less — Purchased input factors	525	556	670	128
Gross agricultural product (at factors cost)	823	960	1175	143
Less — Depreciation	106	117	160	151
Net agricultural product (at factor cost)	717	843	1015	142

Source: 1966 and 1967 — Central Bureau of Statistics; 1971 — Ministry of Agriculture, Agricultural Planning Center, and Economic Planning Authority.

The projected expansion of capital stock in agriculture is about 3% a year, and, as stated above, no expansion is expected in total labor input. Increased utilization of primary production factors — capital and labor — thus leads to an annual increase of about 2% in product; the rest is contributed by the increase of overall productivity. During the last ten years, rising productivity contributed about one half of the total increase in product and amounted to about 5% a year (see Table 16).

Gains in productivity are due to technological improvements, higher yields, more efficient work processes, better organization and administration, etc. This has been estimated for the future on the basis of achievements that can already be foreseen.

Total farm income, equal to the net product (at factor cost), will go up from IL 700 million in 1966 to IL 1,000 million in 1971, in terms of 1966 prices — an annual rise of 7% on the average, compared with 1966, or 5% compared with 1967. This income will pay for land rent, interest on borrowed capital and wages to hired labor, the remainder being the farmers' returns for their work, management and the use of their own capital.

One of the Plan's major objectives is an increase in overall farm income, pari passu with the rising level of income in the economy as a whole, along with more rapid progress for farmers whose income is now below average. Inequality in incomes will be reduced by expanding the operations of the low-income farms, especially in the hills and the South.

It should be emphasized that a larger non-agricultural income is to be expected in the villages through industrialization and the establishment of regional enterprises.

As stated, all data are computed on the basis of 1966 prices, but actual farm income in 1971 will depend on the development of agriculture's terms of trade and the Government's policy on intervention in the price formation.

Certain changes in terms of trade can be foreseen. The prices of fruit, especially deciduous fruit, will decline because of increased supplies by a total of IL 25 million. Prices may be expected to drop in foreign markets, especially for citrus. On the other hand, export incentives will be given at a higher level than in 1966. There may be changes in input prices, especially water rates (see chapter on water) and in land rents. Thus, it is difficult to say in advance just what will be the terms of trade and the farm income during the next five years.

The Government intervened in 1966 to determined prices of poultry, dairy products, industrial crops and grains, and indirectly vegetables. Subsidies to the agricultural commodities amounted to IL 90 million, and for farm inputs — IL 45 million. In addition, the Government paid IL 14 million during that year for drought damage. Part of the output subsidies stemmed from Government intervention in the formation of prices in order to maintain consumers' prices at a certain level, but part is also intended as support to farm income. Since a part of the farm income stems from the Government's budget or, in other words, from other sectors of the economy, its level in 1971 will depend partly on the volume of such support in the future.

CHAPTER TEN: WATER RESOURCES

A. PAST DEVELOPMENT 1948 – 1967

1. The Water Potential

Water has been a national problem in Israel since the early days of Jewish settlement. As far as climate is concerned, Israel lies in the semi-arid zone, on the border between the northern part of the world, which enjoys ample precipitation, and the arid areas in the South and East.

The average annual precipitation in Israel varies from one region to another and decreases from North to South; from 1,000 mm, in Safad to 500 mm in Tel Aviv, 200 mm in Beersheba and only 30 mm in Eilat. In over half of Israel's area, precipitation is less than 180 mm a year (see rainfall map). There are considerable fluctuations in the rainfall from year to year, varying from 25% of the mean annual rainfall in drought years to 160% in good years. Table 1 shows the rainfall in selected localities since 1947/8, compared with the mean rainfall over the past three decades.

The hydrological system in Israel has a number of special characteristics.

1) Precipitation occurs only during the winter months;

2) The sources of water are concentrated in the North and centre, while the South is poor in water;

3) Most of the sources lie at a low elevation, so that the water has to be pumped.

Water sources depend on the rainfall reappearing in the form of groundwater, springs and streams. Since the rainfall in Israel is light and the evaporation rate high, the amount of water available for use is limited.

Water is one of the natural resources which renew themselves annually. The estimates of quantities of water according to which the supply system is planned are based on multi-annual averages. In fact, however, annual quantities available vary considerably.

When the State was established, the potential of conventional water[1] – the annual quantity which can be regularly utilized without jeopardizing the future supply—was estimated at about 3,000 million cu.m. a year. At present, however, the potential is estimated at only 1,500 million cu.m. a year, which is the mean replenishment rate of Israel's water sources over the past thirty years. The rate varied from 400 million cu.m (about

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[1] Conventional water – groundwater, river water, retained surface runoff water and reclaimed sewage water. The main non-conventional source is desalinated sea water.

TABLE 1. Annual precipitation in Israel[1] (in mm)

	Mean rainfall 1931/60	1947/8	1948/9	1949/50	1950/1	1951/2	1952/3	1953/4	1954/5	1955/6	1956/7
Kfar Giladi	769	749	1097	–	460	942	–	926	515	919	734
Haifa	619	590	900	820	396	606	632	626	462	740	577
Tel Aviv	539	485	656	840	322	695	564	637	549	825	568
Afula	444	502	620	539	303	558	559	536	311	515	422
Mishmar Hanegev	244	162	299	322	147	322	188	229	184	258	371
		1957/8	1958/9	1959/60	1960/1	1961/2	1962/3	1963/4	1964/5	1965/6	1966/7
Kfar Giladi		704	563	478	632	608	829	863	827	645	958
Haifa		702	462	417	567	716	516	687	704	480	744
Tel Aviv		458	376	306	576	662	392	623	756	322	673
Afula		397	280	310	402	593	452	585	464	337	560
Mishmar Hanegev		147	200	85	276	171	76	543	490	227	357

[1] Rain years: from beginning of August to end of July.

Source: Meteorological Service.

25% of the average) in a drought year to 2,400 million cu.m. (160% of the average) in a rainy year. (See Table 2).

TABLE 2. Israel's Water Yields Over 30 Years

Annual water yield (million cu. m.)	No. of years
250–500	1
500–750	3
750–1000	4
1000–1250	3
1250–1500	5
1500–1750	4
1750–2000	5
2000–2250	4
2250–2500	1
	30

Source: Proposed Development of Israel Water Sources, 1966/7–1970/1, Water Planning for Israel Ltd. (Tahal).

According to the fifteen-year plan of Tahal (Water Planning for Israel) for the period 1965–1980, exploitable resources of conventional water amount to 1,564 million cu.m. a year, as follows:

	Million cu. m.
Pumping of ground water, coastal aquifer	230
Pumping of ground water, mountain aquifer	592
Surface runoff	82
Coastal groundwater collector	50
Use of Jordan Water (Jordan Basin and National Water Carrier)	469
Sewage reclamation	141
Total	1,564

So far about 80% of these water resources have been developed.

2. Water Consumption

In 1948 the Jewish sector consumed about 230 million cu.m. of water. About 80% were used for irrigation and about 20% for urban and industrial consumption. Self-supply was the general rule, users drilling and utilizing their own wells. With the rapid growth of agriculture and the economy generally, water resources were developed at an accelerated pace and consumption rose from 230 to 1,470 million cu.m. by 1966/67, i.e., by over 600 per cent. Consumption is divided among: 1) agriculture; 2) urban users; 3) industrial users. In agriculture and industry water is a production factor, while the urban demand is mainly for domestic consumption. Table No. 3 shows the development of water consumption from 1948/49 to 1966/67.

TABLE 3. Water consumption in Israel, by Types of User, 1947/8—1966/67 (in million cu. m.)

	1948/9	1953/4	1958/9	1963/4	1964/5	1965/6	1966/7
Total	230	850	1,274	1,288	1,328	1.418	1,471
Agriculture[1]	180	660	1.032	1,056	1.095	1,175	1,221
Agriculture, sweet water[2]	(..)	(..)	(..)	(971)	(1,010)	(1,090)	(1,139)
Industry			46	57	54	59	60
(Industry, sweet water)[3]	50	190	(..)	(..)	(32)	((38]	(36)
Urban use	196		19,6	175	179	184	190

[1] Including domestic consumption in rural settlements.

[2] Defined as water with a chlorine content of less than 400 mg per lit.

[3] Defined as water with less than 2,000 mg per lit chlorine.

Source: Up to 1958/9 (agricultural years) — Central Bureau of Statistics. From 1963/64 (fiscal years) — Israel Water Consumption Survey, 1966/67 — Ministry of Agriculture, Water Commissioner, Water Allocation Department.

(a) Agricultural consumption

Agriculture is the main consumer of water in Israel and its share in consumption has ranged throughout from 80% to 85% of the total. Agricultural use of water grew sixfold during the first 10 years of independence. During this period the irrigated area increased fourfold from 0.3 to 1.2 million dunams (about 300,000 acres). The annual increment of water since 1958/59 has been slight, fluctuating with the amount of annual precipitation. The use of water during this period has grown by about 20%, while the irrigated area increased by 30% to 1.6 million dunams. This means that the use of water has been rationalized, with a lower input per dunam. Between 1957 and 1965, both rainy years, consumption went down from 750 to 700 cu.m. per dunam and between 1964 and 1966, both drought years, from 850 to about 800 cu.m.

In an arid country like Israel, farming is highly dependent on irrigation, and water is a production factor which has to a large extent determined its scope and development. Agricultural settlement was an institutionalised, process regulated and organized by the Jewish Agency and the Government. Farms and settlements were planned according to the amount of water available. In almost every instance, however, settlement nevertheless preceded the development of water resources, so that Jewish agricultural settlement has always suffered from a shortage of water. Since for reasons of State, the settlements were dispersed over the entire territory of Israel, the price mechanism could not be used for regulating the allocation of water among them. Instead, a system of water quotas, allotted to each settlement according to the type of farming adopted, was used. In practice, however, the settlements did not always receive the planned quota, especially those in the South, while settlements which lie close to sources of water are able to use more than the allotted quota.

The consumption of water in agriculture is not uniform throughout the year; hence there is the problem of peak consumption.[2] Until a few years, ago, agriculture was based mainly on crops with a peak irrigation period of six months. Accordingly, water supply networks were planned for an irrigation cycle of 180 peak days during the summer months. In the last few years, however, agricultural production has changed considerably, mainly as a result of the extension of cotton raising, which now forms a higher proportion of field crops. This considerably affected the water supply, since cotton requires intensive irrigation during a short period of time from the beginning of June until the beginning of August (60—70 days), which is the general peak water consumption period. Hence it became necessary to adjust the entire water supply system (as well as, indirectly, the electrical power supply) to provide the amounts required during the peak period but do not operate at full capacity during the rest of the year.

(b) Urban consumption

Urban water consumption comprises the home consumption of the population and the consumption of workshops and minor industries, commerce and services, and public institutions. From 1948 until 1958/59, consumption grew more or less at the same rate as the population increase. In the latter years, steps were taken to encourage water saving in urban areas and as a result water consumption fell off considerably. Although a rising trend started again later on, the pace has slowed down and in 1966/67 the total consumption was still less than in 1958/59.

At present urban consumption totals 190 million cu.m. a year — about 13% of the total. Per capita consumption during the past four years has been constant at about 80 cu.m a year.

(c) Industrial consumption

Industrial consumption — defined as the consumption of water in industrial enterprises and services each consuming at least 5,000 cu. m. a year — is not considerable and has throughout been about 4% of the total.

Consumption per unit output varies from one industry to another. The food and paper industries, for instance, are relatively "wet", each unit of output requiring a large quantity of water. On the other hand there are relatively "dry" industries where the input of water per unit of output is very small.

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[2] For further details see "Water Supply in Peak Months", Z. Kaviv, Economic Quarterly No. 54155, October, 1967.

Even before a water savings programme in industry was introduced in 1964, the increase in industrial water consumption was lower throughout than the increase in industrial output. Since 1964 consumption has hardly risen: in 1966/67 it amounted to about 60 million cu. m. including about 24 million cu. m. saline[3] and 36 million cu. m. sweet water.

3. Development of Water Resources

Israel's water supply has been increased by the stepped up development of her water resources, both on the local and regional, and on the national, plane.

Local and regional development comprises drilling of wells, setting up storage reservoirs, catchment of springs and transferring of water from one region to another or from one place to another within a given region.

In addition, national development was required, since most of Israel's sources of water are in the North, while most of the arable land is in the South. It consists of two sub-systems — the carriers from Rosh Ha'ayin southwards, and the Jordan National Water Carrier from Lake Kinneret (Sea of Galilee) down to Rosh Ha'ayin (see map). The first carrier — the Yarkon-Negev Line was begun in 1952/53. It was originally based on the Rosh Ha'ayin springs — the source of the Yarkon River — and consists of two main pipelines starting from Rosh Ha'ayin, the eastern passing along the foothills of the Judean mountains and the Western along the coastal plain. Both pipelines meet near the Zohar Reservoir and continue from there on in one pipeline down to Kibbutz Magen. The system further comprises four large pumping stations, five operative reservoirs and one seasonal reservoir at Zohar with a capacity of 8 million cu. m. water to supplement the daily supply during the peak agricultural season. The project was completed in 1955/56 and by 1965/66 it carried some 290 million cu. m. of water.

The second project — the Kinneret — Rosh-Ha'ayin pipeline — was started in 1956/57 and completed in 1964. Its twofold purpose was to lead water from North to South and to integrate all the regional water works into one national grid. It was designed to carry about 320 million cu. m. of water annually from Lake Kinneret, as well as from other sources, mainly intercepted flood water and groundwater surpluses in other parts of the country. The main pumping installations were set up along the shores of Lake Kinneret. The water is conveyed in an open canal through the mountains of Galilee down to Nahal Tzalmon, from which, with the aid of additional pumping stations, it is led across the Beit Netofa valley. From there it passes by pipeline, through the Valley of Jezreel, Samaria, Emek Hefer and the Sharon Plain, down to the Yarkon project at Rosh Ha'ayin. In this way the National Water Carrier with its various installations crosses the country from the North down to the center, and is linked up on its way with the carrier systems of various regional and inter-regional waterworks, including the Western Galilee-Kishon works, the "Triangle Border" works and the Givat Ada and Pardess Hanna works, to join the two pipelines of the Yarkon project in which the Jordan water is led down through the Negev. An integrated system was thus set up comprising most of the

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3) Saline water for industry is defined as water with a chlorine content of over 2,000 mg per lit and water that cannot be used for agricultural purposes.

major water-works in the country and regulating most of the national water resources so that they may be used to the fullest extent.

From 1950 to 1966 some IL 1,348 million (at 1966 prices) were invested in the development of water.

TABLE 4. Gross investment in fixed assets for water development, 1950—1966 (IL million, at 1966 prices)

Total	1,348
1950—1952	206
1953—1955	259
1956—1964	733
1965—1966	150

Source: Economic Planning Authority, based on CBS data.

Until 1948, as stated, most of the water supply came from independent waterworks. Since the development of water resources on a national and regional basis began, the share of the Mekorot Water Company, founded as far back as 1937 (and at present jointly owned by Government, the Jewish Agency and the General Federation of Labor-(Histadrut) in the total supply has advanced from 7% in 1948 to about 50% at present, the rest being still supplied by independent water works.

4. The Cost of Water

Thanks to the National Water Carrier, as stated above, most of the water supply has been integrated into one system through which water can be conveyed from one place to another. The cost of water in this system can therefore be calculated at different points in the country. Such a calculation was made for 1964/65, when the national system supplied about 1,300 million cu. m., of which about 130 million cu. m. came from Lake Kinneret. It is given at 1962/63 prices[4] and relates to the real cost of water to the national economy[5], comprising both capital expenditures and current annual operating and maintenance costs. (See Table 5).

Local variations in the cost of water are due to differences in the cost at source, distance from the source, altitude, distance from the National Carrier, and quantities supplied. In areas located close to the source of water e.g., the Hula Valley, the Jordan Valley and Beit She'an) the cost of water is 3—4 agorot per cu. m. and in the coastal area about 4—5 agorot per cu. m. As one goes further South, the cost increases rapidly to about 60 agorot in Har Hanegev. More than half the quantity of water costs 5 agorot, about one-fifth 5—15 agorot and another fifth over 15 agorot.

4) No more up to date costing (in respect of the year and the price level) is available. The increase in the quantity of water taken from Lake Kinneret to 230 million cu. m. in 1967 reduces costs, but, on the other hand, capital expenditures grew by about 10%, so that presumably the two trends offset each other.

5) Taking into account the revaluation of investments at replacement cost and at 8% interest, but at actual electricity prices, which were lower than the real cost of electricity to the national economy.

TABLE 5. Average Real Cost of Water Supply, by Region, 1964/65 (at 1962/63 prices)[1]

	Cost (agorot/ cu.m.)	Quantity of water (million cu.m.)	Quantitative distribution (per cent)	
Hula	3.6	111.7	708.4	55.4
Jordan Valley, Bet Shean, Gilboa	3.8	194.0		
Coastal Strip, Sharon, Lod Plain	4.8	402.7		
Migdal Lahat	6.9	15.9	159.0	12.4
Yavne	8.6	19.0		
Western Galilee, Kishon	9.9	124.1		
Ephraim Mountains, Nahal Oren	12.4	19.5	103.0	8.0
Nes Ziyona	13.5	41.1		
Gat	14.1	32.0		
Lower Galilee	14.3	10.4		
Nir Am, Saad	19.4	11.5	41.5	3.2
Kfar Menahem	19.6	30.0		
Dan Area, Holon, Southern District and Shorek	23.9	142.8	146.8	11.5
Agur	26.3	4.0		
Northern border hills	34.3	10.6	112.6	8.8
Lachish, Gevar'am, Shuval	37.4	62.0		
Tekuma	41.2	40.0		
Har Hanegev	61.9	8.5	8.5	0.7
Total			1279.8	100.0

[1] See footnote 4.

Source: Water Works in Israel — Forecasts and Implications, Publication No. 3, Ministry of Agriculture, Water Commissioner, Economic Section, June, 1966.

5. Institutional Aspects of Water Supply

In 1959 the Knesset passed the Water Law, by which all rights in water are vested in the State. Until then various bodies had been dealing with Israel's water resources, claiming possession by virtue of past usage. Th Water Commissioner, appointed in 1959 under the authority of the Minister of Agriculture, was vested with the sole authority to issue licences for exploiting water sources, setting water tariffs and allocating water among various consumers. He also allots water to the agricultural settlements according to the instructions of the Ministry's Agricultural Planning Center Urban settlements are generally supplied by municipal waterworks owned by the local authorities.

Water rates are fixed institutionally by type of consumer and according to the source of supply, and do not necessarily reflect the actual cost of water. Generally the rates that most farmers pay are low in relation to costs, while urban and industrial consumers pay a high water rate. The present rates policy is as follows: The rates for agricultural water supply, when the costs, as calculated by the suppliers[6], are less than 6 agorot, is fixed on the basis of the cost plus an additional charge of 10%, but not

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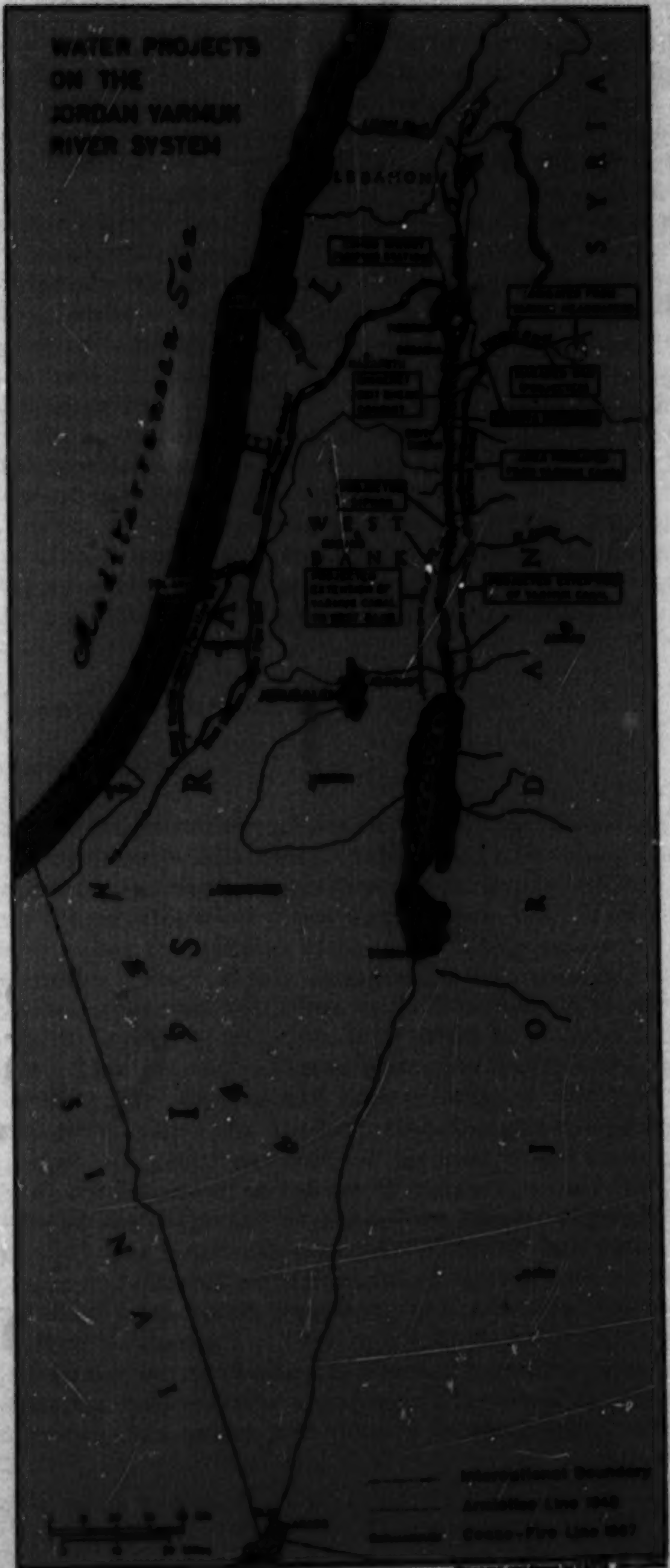
6) Capital costs, which are a large proportion of the water costs, are computed by the suppliers on the basis of the value of their past investments and the actual rate of interest paid by them. They are therefore not identical with the real cost to the supplier, which should be based on the replacement value of the investment.


WATER PROJECTS
ON THE
JORDAN YARMUK
RIVER SYSTEM
LEBANON
SYRIA
Mediterranean Sea
ISRAEL
WEST BANK
PROPOSED EXTENSION OF YARMUK CANAL TO WEST BANK
PROPOSED EXTENSION OF YARMUK CANAL
JERUSALEM
JORDAN
SINAI
International Boundary
Armistice Line 1949
Cease-Fire Line 1967

exceeding 6 agorot. When the costs to the supplier are over 6 agorot the maximum rate chargeable is 6.75 agorot per cu. m., except from farmers in the mountain areas, for whom the maximum rate is 9.75 agorot per cu. m. Industry pays no more than 8 agorot for water costing up to 6 agorot and the maximum rate for water costing more than 6 agorot is 13 agorot per cu. m. The maximum rate for the urban supplier is 15 agorot for water costing up to 6 agorot, and 25 agorot for water costing over 6 agorot, with the addition of urban distribution costs. Water rates to urban consumers are fixed by the local authorities.

This rates policy means that extra charges are collected from some of the consumers, while others are subsidized. The charges and subsidies are regulated by an "equalization fund" operating by the Water Commissioner. Last year this fund collected charges amounting to IL 10 million, of which the urban consumer paid some 70%. The Government contributed another IL 15 million out of its budget, so that the Fund had about IL 25 million at its disposal to subsidize the water supply of consumers in those areas where the cost of water is relatively high.

This, however, is not the whole support for water. To arrive at the total it would also be necessary to add the difference between the real interest in the economy and the actual interest paid by the water suppliers as well as the subsidies for the electricity consumed by them.

6. Water Supply Problems

(a) Hydrological situation

The accelerated settlement activities which took place in the fifties were based on optimistic estimates of the country's water potential and the development of its water resources. So as not to hold up settlement projects until the development plans were completed, groundwater from the sandy layer along the coastal strip — the sandy aquifer — was used up to the maximum. Part of this exploitation was intended to use the one-time groundwater reserve, while the rest, exceeding the amount of water restored to these layers by rainfall, was taken as a "loan", to be returned at a later date. This excess pumping was done on the assumption that in the future, when water sources had been developed, the debt would be returned. However, since the Jordan project began operating only in 1964 — instead of two years earlier, as planned — and since during this period there was a consecutive series of drought years, these groundwater resources were in fact depleted far beyond the extent originally contemplated. At the end of 1966 this cumulative excess pumping was estimated at about 350 million cu.m.[7] This deficit was reduced during the two rainy years 1966/67 and 1967/68 but since no survey has yet been carried out, the actual size of the deficit is unknown.

The deficit in the water balance of the sand-aquifer may cause sea water to invade the sweet-water aquifers on the coastal plain, so that existing wells may turn saline and have to be excluded from the supply

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7) For further details, see the Hydrological State of the Coastal Aquifer, Means of Rehabilitation and Future Utilization, Water Commissioner and Water Planning for Israel, December, 1966.

network. The penetration of the saline water front into the aquifer varies from place to place according to the specific hydrological and geological characteristics and pumping procedures of each place.

(b) Quality of Water for Agricultural Use

Water is not a homogeneous product. There are many different qualities, measured by the amount of chlorine per liter; the higher the chlorine content the lower the quality. Water with more than a certain chlorine content can no longer be used for irrigation unless it is mixed with higher-quality water to bring the salinity down to the permissible level which is not harmful to plants or soil.

The problem of salinity arose after the National Water Carrier was put into operation and water from Lake Kinneret, with a salinity of over 300 mg/liter of chlorine, was conveyed through it. Since our knowledge of plant and soil tolerance to water salinity is imperfect, it was decided that in the meantime the salinity limit for the agricultural water supply should be 140 mg/lit Cl North of the Yarkon and 250 mg/lit Cl South of the Yarkon. So far there is no clear-cut evidence as to whether this salinity is too high and has already done damage, or whether water with an even higher salinity can be used for agricultural purposes without harmful effects. Recent studies have shown that a salinity of 250 mg/lit Cl or thereabouts does not cause any serious damage, but, as stated, the tests have not yet been completed.

At this stage attempts are being made to reduce the salinity of Lake Kinneret, and it seems that, in the long run, prospects are favorable. On the other hand, the problem of salinity will become more acute the more low-quality water, such as reclaimed sewage water, which has a high chlorine content because of its prior urban utilisation, is introduced into the water supply.

B. WATER DEVELOPMENT PROGRAMME, 1967—1971

1. Demand for Water

(a) Agricultural Consumption

The agricultural consumption forecast does not reflect demand in the ordinary sense of the term, since the agricultural water supply is institutionally regulated and not left to the play of the free market. To estimate the actual demand, the value of marginal output of water, that is, the net incremental return obtainable from an additional cubic meter of water, has to be examined. This calculation should be made for a relatively "thirsty" region, where complementary factors of production exist so that the return on the marginal use of water would be high. The Lachish Ashkelon region is a case in point, and studies conducted[6] there have shown that the value of marginal output in this area is between 11 — 13 agorot per cu.m. of water. Other studies have led to similar findings[9]. It should be noted that this is about the price (approximately 15 agorot per cum. m.) which farmers actually pay for unofficial transfers of water rights. As stated, effective water rates are lower, nor do they always reflect the cost of water in a particular area, and the real demand for water is thus not revealed. It may be assumed that for about 10—15 agorot per cubic meter, most farmers would continue buying the same amount as today, but at a higher rate the quantity taken would decrease.

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[6] Dr. Ezra Sadan, "Water Development Problems in Israel", Economic Quarterly Nos. 54—55, October, 1967.

The projections of the amount of sweet water to be placed at the farmers' disposal according to the water development plan were made by the authorities in charge of agricultural and water planning. This amount was the basis of the five-year agricultural plan. It was decided that for irrigation (including rural household consumption), 1,035 million cu.m. would be supplied in 1970/71 and 1,042 million cu.m. in 1971/72[10] as against 1,008 million cubic meter in 1966/67, which means that the annual increase would be relatively low. These are the normative quantities, i.e., the amount required in a year of average rainfall according to the irrigation norms of a given crop programme.

According to the water savings scheme recently worked out by the Water Commissioner[11], it is estimated that some 110—160 million cu.m. a year can be saved in agriculture every year by installing control and regulation devices both in the water transport system and in the local and field distribution system. This means that the agricultural production programme for 1971 can be carried out with less than 1,035 million cu.m. of water and the allocation of water to agriculture can be reduced as follows.

TABLE 6. Effect of Water Saving in Agriculture on Consumption Estimates, 1966/67—1971/72

	Without savings	At annual saving of 20 million cu.m.	At annual saving of 30 million cu.m.
1966/67	1,008	1,008	1,008
1967/68	1,018	1,018	1,018
1968/69	1,022	1,002	992
1969/70	1,028	988	968
1970/71	1,035	975	945
1971/72	1,042	962	922

Source: Economic Planning Authority calculations.

(b) Urban Consumption

The urban consumption forecast was based on two variables: the population increase and the development of per capita consumption.

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[9] Dr. Dan Yaron — "Agricultural Water Demand in Israel", in Development of Water Resources in Israel, Kaplan School of Economics and Social Sciences, 1965.

[10] Source: Report of Committee for Examining Water Demand Forecasts for Fifteen-Year Development Plan of Israel's Water Resources, September 1966, Appendix I, p. 32.

[11] Proposed Rationalization of Water Utilization in Israel, 1969/70—1979/80, Water Commissioner, Ministry of Agriculture, September, 1968.

According to the forecast, the population of Israel by 1971 will be about 3.1 million, with a rural population of half a million, while estimated per capita consumption is expected to grow only slightly to 81 cubic meter[12]. Accordingly, the urban consumption in 1971 will be 210 million cubic meter, as against 190 million cubic meter in 1966/67. This estimate takes into account the execution of a stringent water savings policy, by means of water saving devices, replacement of pipes, etc.

(c) Industrial Consumption

The industrial water consumption forecast is based on two variables: a) the rate of industrial growth, taking into account the composition of the increased output in the various industries and the different quantities of water used per unit output. b) the consumption of water per unit output, taking into account the economics to be expected as a result of the projected saving scheme.

The consumption of sweet water for industrial uses in 1971 is estimated at about 62 million cu. m.,[13] as against 36 million cu. m. in 1966/67.

(d) Consumption for the Restoration of the Hydrological Situation

As stated above, a deficit has accumulated in recent years as a result of over-pumping, apart from the quantities which have to be added every winter to the coastal aquifer so that it may be possible to go on pumping at the present rate in the summer months. Two methods have been suggested for the rehabilitation of this aquifer and its regular long-range utilization. The one is based on replenishing the hydrological depressions due to overpumping, and the second on stemming the advance of sea-water into the aquifer.[14]

According to the first method, it is proposed to replenish all depressions (whose volume at the end of 1966 was estimated at 350 million cu. m.) by introducing large quantities of water at the existing pumping sites, in addition to the quantities already pumped into the aquifer every winter, to enable it to be regularly operated during the summer months. In this way it is intended within 6—12 years to bring the groundwater level in the different areas to a state where most of the deficits due to prolonged over-pumping are made good. The height of the water table thus attained should also safeguard the aquifer against the penetration of saline water.

12) Report of Committee for Examining Water Demand Forecasts, Stepmber, 1966.

13) Based on the Report of the Committee for Examining Water Demand Forecasts, September, 1966, taking the average of the two alternatives of 58 and 65 million cu. cited there.

14) The Hydrological State of the Coastal Aquifer- Means of Rehabilitation and Future Utilization, Hydrological Planning Department, of Tahal (Water Planning for Israel) and the Hydrological Service of the Water Commissioner, Ministry of Agriculture, December, 1966. In addition to a description of the present state of affairs, the report includes estimates of the annual quantities overpumped and of the deficits accumulated during the last few years, as well as of the quantities of water required for the current operation and rehabilitation of the aquifer.

The second or "barrier" method proposes to stop the advance of the salt water front beyond a specific limit by introducing water only along a barrier line at a distance of 1–2 km from the seashore. As a result the local groundwater level along the coast will be high enough to prevent the advance of the saline water. The water to be pumped in will be the same as is already being pumped into the aquifer for its current operation. In this way the salination of the groundwater will be prevented without any need for the time being to restore the quantities depleted by over-pumping.

Both alternatives assume that in 1966/67 the annual pumping capacity for this purpose of the national and regional carrier systems connected with this aquifer was about 100 million cubic meter, considering both the available quantities and the existing carrying facilities. The amount of additional water required for the operation and rehabilitation of the coastal aquifer was calculated when the hydrological deficit was estimated at 350 million cubic meter. By the first method of replenishing the depressions it was estimated at 284 million cubic meter from 1967/68 until 1971/72, including 88 million cubic meter in 1971/72 alone. By the "barrier" method, the quantity required was estimated at 79 million cubic meter until 1971/72 and 46 million cubic meter in 1971/72 itself. Since the hydrological deficit has decreased during the past few years, there will be considerable changes in these figures and both methods will have to be reexamined in the various areas of the coast to find out whether they are really interchangeable.

(e) Total Consumption in 1971/72

Table 7 shows the total consumption of sweet water in 1971 according to the different methods suggested for solving the hydrological problem and the proposed economies in agricultural water consumption, compared with the total consumption in 1966/67:

3. WATER RATES POLICY

Water rates can be manipulated in such a way as to encourage more efficient and economical utilization. It may be assumed that urban and industrial demand is not very elastic so that it cannot be greatly affected by a change in rates. In agriculture, on the other hand, water rates are distinctly below the value of the marginal output of water, so that there is a surplus demand. To make for a more rational allocation of water among the different agricultural consumers, which is at present done by administrative rationing, it is proposed[15] to revise the existing water rates by grading them in such a way that part of the quantity is supplied relatively cheaply and the rest at a higher rate than at present, so that the total water expenditure of the farmer should not be higher than it is now, while the higher rate for the marginal quantity should act as an incentive to make him reconsider the use of this extra water. Specifically it is proposed:

a) for consumers who at present pay less than the cost of water, the first 80% of the water allocation will be sold at a rate lower by 25%

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[15] The Water Commissioner: Proposed Revision of Agricultural Water Rates, February, 1967.

of the difference between the present rate and average supply costs,[16] while the remaining 20% will be sold at a rate equivalent to the average supply costs. This means that every cubic meter of water included in the first 80% of the allocation will receive a 25% higher subsidy than at present, while the subsidy cn the remaining 20% will be cancelled altogether, so that if the consumer continues using the same quantity of water as before, the total subsidy he receives will remain the same.

TABLE 7. Sweet Water Consumption in 1971/72 and 1966/67 According to Alternative Assumptions (in millions of cubic meters)

Solution of hydrological deficit	Replenishment of Depressions	"Barrier" Method	Replenishment of Depressions	Replenishment of Depressions	"Barrier" Method	"Barrier" Methods	Consumption in 1966/67
Economies in agricultural water consumption	0	0	20	30	20	30	
Agricultural consumption	1042	1042	962	922	962	922	1008[1]
Urban consumption	210	210	210	210	210	210	190
Industrial consumption	62	62	62	62	62	62	35
Hydrology	88	46	88	88	46	46	-
Losses	53	53	53	53	53	53	50
Total	1455	1413	1375	1335	1333	1293	1283
Increase over 1966/67	172	130	92	52	50	10	

1) The normative quantity in millions of cubic meters a year, i.e., the amount of water required according to the irrigation norms in an average rainfall year.

b) Consumers of cheap water who at present pay an extra charge of the will pay the entire costs of the first 80 % of water, but no charge to the equalization fund, while for the remaining 20% they will pay the full average supply costs plus an extra charge five times that paid until now. This means that the consumer who uses his full allocation will pay the same as before, but if he saves part of the allocation he does not pay the extra charge, which is five times higher than at present.

This proposed revision of water rates policy will constitute a major step towards a more rational utilization of water in agriculture and will help to ensure the implementation of the planned savings programme.

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16) As calculated by the suppliers, i.e., not according to the real costs either to the economy or to the supplier, see footnote 6.

3. WATER SUPPLY AND REQUIRED INVESTMENTS

(a) Water Development Plans for 1966/67—1968/69

The plans for these three years are already in the execution or pre-execution stage. For 1966/67 and 1967/68 the investments have already been made and the investments for 1968/69 have been included in the development budget of the Mekorot Water Company. After the implementation of this investment programme, totalling about IL 197 million, the supply of water in 1969/70 will be about 92 million cubic meter more than in 1966/67, so that every additional cubic meter of water will be obtained at an investment of about IL2. A breakdown of the investments and the extra water obtained during this period, by years and waterworks, is given below.

TABLE 8. Investments and Additional Quantities of Water According to Plan and Operational Budgets of Mekorot Ltd., 1966/67 - 1968/69

	According to operational plans for 1966/67 - 1967/68		According to development budget for 1968/69		Total for three years	
	Investments (IL million)	Additional Water (million cu. m.)	Investments (IL million)	Additional Water (million cu. m.)	Investments (IL million)	Additional Water (million cu. m.)
Total	136.5	77.0	60.1	15.0	196.6	92.0
National water system	43.6	26.0	14.7	9.0	58.3	35.0
Storm runoff	16.5	12.0	3.0	-	19.5	12.0
Development, long-range planning, etc.	4.1	3.0	1.9	1.0	6.0	4.0
Sewage reclamation (Dan area)	10.0	-	14.2	-	24.2	-
Regional carrying and distribution systems	62.3	36.0	26.3	5.0	88.6	41.0

Source: The Water Commissioner.

(b) Development Plans After 1968/69

Further developments after 1968/69 depend on the method chosen for improving the hydrological situation and on the alternative consumption estimates. Rehabilitation of the coastal aquifer by building a barrier against sea water seepage requires further investments to expand carriers and carry out additional drillings in order to be able to introduce the projected quantities of water into the ground in those areas where the barrier is to be erected.

According to various consumption estimates, the additional quantity of water over 1968/69 which will be required in 1971/72, after 92 million cubic meters have been added in 1966/67 and 1968/69, is as follows:

	Building of Barrier	Replenishment of Depressions
	(in million cu. m.)	
Allocation of water to agriculture remaining constant	+38	+80
Allocation decreasing by about 20 million cu.m. annually	-42	0
Allocation decreasing by about 30 million cu.m. annually	-82	-40

During this period either of the following two courses could be adopted.

One course is to concentrate on increased saving in water consumption. According to the savings scheme proposed by the Water Commissioner and about to be carried out during the next five years as from 1968/69, the investments required for rationalizing the use of water and effecting economies total about IL 142 million. As a result of these investments, some 180—230 million cubic meters annually will be saved in agricultural, urban and industrial consumption by the end of the period, so that the investment will be less than IL 1 per cubic meter of water. The data given below include only estimates of the investments and the amount of water saved by 1971/72, so that they constitute only part of the suggested plan. The annual breakdown of the investments was made on the basis of the effective investments in 1966/67—1967/68 and the existing plans for 1968/69.

TABLE 9. Investment Estimates for the Rationalization of Water Consumption and Savings Obtainable — 1966/67—1971/72

	Investments in IL million						Annual quantity saved in 1971/72 (in million cu.m.)
	1966/7	1967/8	1968/9	1969/70	1970/1	1971/2	
Total	1.0[1]	11.3[2]	27.0[3]	28.7[4]	28.7[4]	28.7[4]	135-175
Agriculture	-	-	6.0	3.3	3.3	3.3	80-120
Industry	0.3	0.7	1.8	2.1	2.1	2.1	9
Urban consumption	0.7	0.6	1.2	6.7	6.7	6.7	10
Pipes[5]	-	10.0	18.0	16.6	16.6	16.6	36

1) Source: Budget of the Water Commissioner for 1966/67.

2) About IL 6.3 million out of the 1967/68 Budget and IL 5 million suppliers' credit.

3) Source: Draft Budget for the Rationalization of Water Consumption in 1968/69, submitted by the Minister of Agriculture to the Minister of Finance on 3 December 1967.

4) Assuming that the balance of investments budgeted for 1969/70—1972/73 is carried out at a uniform annual rate.

5) Investments for the replacement of discarded pipes.

The second course is to go on with the plan for the development of new water sources as proposed by Tahal. The proposed developments include the full implementation of the Jordan basin, the utilization of the last remaining groundwater resources, sewage reclamation, especially in the Dan (Tel Aviv) area, catchment of storm runoff, and completion of carrying and distribution systems.

The plan of Tahal is based on the assumption that the supply of water to agriculture will not be reduced (even if rationalized) so that additional quantities will be needed and new sources have to be developed. Tahal therefore proposes to proceed with the five-year plan as originally drawn up. Considering the present rate of execution (which was not exactly according to plan) it appears that in 1970/71—1971/72 sources to supply another 100 million cubic meters of water can be developed. The investments required are estimated at about Il 150 million, while the rest of the five-year plan will be spread beyond 1971/72.

TABLE 10. Investment Estimate for Developing New Water Sources from 1969/70 and Additional Quantities of Water Obtainable [1]

	Investments in IL million Per Annum			Additional Quantity of Water in Million cu. m. Per Annum		
	1969/70	1970/71	After 1970/71	1970/71	1971/72	After 1971/72
Total	76.1	73.2	152.4	53.0	48.5	82.5
National system	10.3	17.0	6.2	7.0	16.0	2.0
Storm runoff	12.0	17.2	49.3	7.5	8.0	28.5
Sewage reclamation	7.0	4.0	61.8	17.0	5.0	44.0
Water mains for carrying and distribution	42.5	31.7	33.1	20.0	18.0	4.0
Miscellaneous	4.3	3.3	4.0	1.5	1.5	3.0

1) The table shows the estimated investments and additional quantities of water as up-dated by the Water Commissioner on the basis of Tahal's five-year development programme, taking into account the pace of execution until 1968/69 and the subsequent performance capacity.

This plan comprises a large number of separate projects. It should be stressed that uncertainty prevails as to the quantities of water to be obtained. This applies particularly to storm runoff and sewage reclamation projects, where the experience gained so far is rather scanty. According to the above investment estimates and projected amounts of water obtainable, the cost of water conveyed through the new parts of the national system will be 16 agorot per cubic meter. In most of the storm runoff catchment projects, production costs (not including carrying costs) will be from 20 to 35 agorot per cubic meter and in sewage reclamation projects between 8 and 13 agorot. It should be remembered that sewage reclamation water, accounting for about one third of the new water obtainable under this plan, has a high salinity content so that its quality is poor. As stated however, the above cost estimates may be underestimated.

During the three years from 1969/70 to 1971/72, it will be necessary to decide on either of the two courses — the savings programme or the development plan for new water — or on some combination of the two.

If the savings programme stands a good chance of being successful, both regarding the quantities of water saved and its reallocation, it seems that it should be preferred over the development of new sources, since the water it yields is cheaper.

4. DESALINATION OF SEA WATER

The sea will be Israel's sole source of additional water once the entire potential (of which 80% is already being utilized) has been tapped. It is, of course, an inexhaustible source, but at the present level of technology the desalination of sea water is extremely expensive.

Desalination of sea water is a fairly recent innovation. So far it has been used only to supply drinking water in waterless areas (deserts or islands) or in urban centers where the sources of water have been polluted.

Theoretically, there are several methods, but few of them have reached a sufficiently advanced experimental stage to form the basis of practical implementation plans. Four of the more practicable processes are now being investigated in Israel: the Zarchin freezing process, the electrodialysis process, the reverse osmosis process, and the flash evaporation process.

The Zarchin process is based on the fact that salts separate out from sea water when it is frozen. Theoretically the low amount of energy required to separate out the salts should make this process cheaper than other methods. An experimental plant was set up and operated in Eilat, but owing to technical difficulties which raised the costs considerably it has been closed down.

A pilot plant for desalination by the electrodialysis process is now operating at Ze'elim in the Western Negev. Here the water is desalinated by passing electric currents through the water and separating the salts out in this way. The advantages of the method are that the salts are extracted gradually, so that the desalination process and the expenditure involved can be adapted to the salinity required. On the other hand, for technical reasons the process is not suitable for large-scale application in case of water with a high salt content, like sea water. The process seems appropriate for the partial desalination of brackish ground water in the Negev, which contains about 2500 mg/lit Cl.

Of the processes known so far for application to sea water the cheapest and experimentally most advanced is the evaporation method. All over the world research and development is going on and the plants are constantly being perfected. One of the improvements introduced is to combine an evaporation plant with a steam power station. The underlying idea is that only part of the energy contained in the steam is utilized for the production of electricity, while the rest is usually wasted. If a desalination plant is operated in conjunction with the power station, the steam can also be used for the desalination of water, so that the energy utilization rate is higher.

A single-unit plant of this kind has been set up in Eilat, and supplies the town with both drinking water and electricity. Last year it supplied 1.4 million cubic meters of water — 80% of Eilat's total consumption, at production costs over IL 1 per cubic meter.

In desalination plants operating on the evaporation process, the main problem is the size of the production unit. The bigger the plant the cheaper the water, but the more complex are the technical problems encountered. The largest plant so far operating according to this method is in Key West in the U.S.A., with an output of 3 million cubic meters a year.

A special way of combining desalination with the production of electricity is the use of a nuclear power station. This may reduce the cost of the water, since for technological reasons the volume of the steam used for producing electricity by nuclear methods is greater, as its pressure is lower. A combined plant of this kind is now being erected in Southern California. During the first stage it is expected to produce 60 million cubic meters of water a year, and in the final stage 180 million cubic meters. The cost of water once the plant operates to full capacity is estimated at 6 cents per cubic meter.

The possibility of setting up a combined nuclear desalination and electric power plant in Israel was mooted after a joint communique issued by the Israeli Prime Minister and the President of the USA in June 1964, It was assumed that Israel is now one of the countries best suited for the erection of a large-scale desalination plant, since she already utilizes most of her conventional water potential and has the scientific and engineering ability to operate a revolutionary installation of this kind. The plant should comprise a nuclear reactor, a power production plant and a desalination unit. It is intended to produce 300 megawatt of salable electricity and about 120 million cubic meters of water a year. According to a survey conducted by an American firm, the investment will be $213—238 million (not including the water carriers from the plant to the national system). The cost of water in a combined installation of this kind should be calculated on the basis that the cost of the electricity, which is now being produced more cheaply in conventional power stations, should not be raised, i.e., all expenditures beyond those chargeable to the electricity supply should be charged to the account of the desalinated water. According to alternative interest rates of 8.4, 4.6 and 1.6 per cent, the cost of the water has been computed at 17.6, 10.6 and 6.3 cents per cubic meter, respectively[17], ex works, i.e., excluding transport to the water system and to the consumer. This price is still considerably higher than what the marginal consumers — the farmers — are able to pay. It therefore appears that it will be worth while to set up a plant of this kind only after the expected technological progress has still further reduced the cost of desalinated water.

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[7] The calculation was made when the rate of IL 3 per dollar prevailed.

CHAPTER ELEVEN: MANUFACTURING AND MINING

A. INDUSTRIAL DEVELOPMENT 1950–1966

1. SUMMARY

Israel's industrial development, like that of the economy as a whole, was rapid in comparison with other countries, whether developed or developing. From 1950 until 1966 industrial output, in real terms, increased 4.8 times — by more than 10% a year, on the average, and reached IL 6,900 million in 1966. Industrial exports expanded from $ 18 million in 1950 to $ 375 million in 1966 — the equivalent of an annual growth rate of 21%. During this period about IL 5,200 million (in terms of 1966 prices) were invested in industrial fixed assets, and the gross stock of capital expanded at an average rate of 13.5% a year, to stand at IL 4,600 million at the end of 1966. Industry provided 132,000 additional jobs, raising industrial employment from 90,000 in 1950 to 222,000 in 1966 — an increase of 6% per annum. Output per worker rose on the average by 4% a year.

TABLE 1. Major Indicators of Industrial Development, 1950 – 1966*

	1950	1966	Average Annual Growth Rate (per cent)
Output (IL million)	1,450	6,910	10.3
Export ($ million)**	18.2	375.2	20.8
Stock of capital (IL million)+	585	4,475	13.6
Employees ('000)	89.4	222.0	5.8
Output per worker (IL '000)	16.2	31.1	4.2
Capital stock per worker (IL '000)	6.5	20.2	7.3

* All Israel pound data are in terms of 1966 prices; exports, however, are at current prices.

** Including net diamond exports, after deduction of manufactured diamonds returned to Israel; excluding sales of old ships and planes and unrequited exports (personal belongings, gift parcels, etc.).

+ Stock at the beginning of the year; includes construction equipment.

Various factors created conditions for rapid industrial development. Local demand for industrial products grew rapidly, owing to the rapid increase in the number of inhabitants and the rise in the standard of living.

especially during the latter half of the 1950s and thereafter. Larger exports accounted for 20% of the increase in industrial output during this period.

Another cause was the rapid development of the entire economy, which stepped up the demand for semi-finished products and industrial investment goods. Widespread construction activity caused considerable expansion in demand for industrial intermediate products. Industry also enjoyed a great degree of protection against competitive imports; most of the increase in domestic demand for industrial products was channelled to local industry, enabling it to replace imports.

Expanding supply of the factors of production enabled industry during most of these years to satisfy rising demand. The large volume of investment in the economy was made possible by the extensive import of capital, even without the existence of sufficient local savings. Industry, naturally, also shared in the benefits of such capital imports; industrial investments were influenced greatly by the Reparations Agreement, which included machinery and equipment for industry. The growing population supplied industry with manpower potential, but difficulties arose concerning the absorption of some of the new immigrants, because of their lack of vocational training, previous industrial experience, or sufficient educational background. Rapid development also created problems concerning the supply of highly trained manpower.

Together with the factors that made rapid industrial development possible in Israel, there were objective and external limitations, which influenced the direction of this development and the structure of industry.

The first limitation lies in the scarcity of raw materials and sources of energy. Israel is not rich in natural resources, sources of energy such as oil and gas, facilities for generating cheap electricity, and important agricultural raw materials. Many industries, which are based on utilization of such resources, cannot, therefore be established here. Industry in Israel is based mainly upon imported raw materials, with the exception of a few minerals — such as potash, copper and phosphates — and the processing of a few agricultural raw materials — such as citrus products.

The second limitation is the relatively limited size of the local market. Not only does this factor limit future industrial growth, it is thought to be the cause of many structural deficiencies of Israeli industry — plant size and fragmentation of production, together with little competition. All these have their effects on the productivity and the limited competitiveness of Israeli industry, both at home and in foreign markets.

Another limitation is the distance from export markets and the sources of imported raw materials. The natural markets for Israeli products, the neighboring Arab countries, are closed to them, which inflates transport costs and reduces competitiveness in export markets. Political reasons have also kept Israeli exports out of other markets, such as the Soviet Union, China, India, Pakistan, Ceylon, etc.

Most of industrial production developed in a variegated fashion. In many instances rapid physical development was achieved only by sacrificing economic profitability and relative advantages. At certain times it was influenced by political and social considerations, and the need to absorb the immigrants, solve employment problems, and populate development towns. Most industrial development was geared to satisfy local demand

and replace imports, while protection of local production made it possible to set up enterprises which are not worthwhile for the national economy.

The Government played a decisive role in the development of industry, especially during the last ten years. Its influence on the process of industrialization was considerable, because, *inter alia*, a great part of capital imports was carried out through it. At first industry did not rate highly on the Government's list of priorities. At that time the emphasis was placed on agricultural development and construction, in order to supply the new immigrants with food, housing and essential services, such as schools and hospitals. The Government's development policy gradually began to change during the second half of the 1950s, when the emphasis was shifted from agriculture to industry, because agriculture could no longer provide additional jobs or contribute further to the dispersal of population. Furthermore, it began to be widely recognised that the trade deficit must be reduced. Rapid industrial development was the only way to any decisive advance towards the solution of these problems.

The Government's influence on industrial development found expression in various fields. It influenced the process indirectly by developing a system of education and vocational training, as well as infra-structural services for industry. Its direct influence on industrial development was exerted primarily by the following methods:

a) Protection against competitive imports, by administrative means and protective tariffs;

b) Relatively low-interest loans from the Development Budget, and various reductions in direct and indirect taxes under the Law for the Encouragement of Capital Investment. The Government also took the initiative in persuading potential investors, for instance, through the Investment Authority;

c) The Government set up industrial enterprises under its own complete or partial ownership, mainly in the mining, basic chemicals and fuel industries.

d) Industrial exports were encouraged by raising the effective exchange rate. This was accomplished by general incentives, industry-wide funds to support exports, support payments to reduce input costs, and other assistance. The Government also helped exports through commercial agreements and clearing agreements with various countries.

e) The Government made working capital loans available to industrial enterprises, for export as well as for the local market, at interest rates below those of the open market.

f) Cartellization was permitted in those instances where the Government believed it could lead to the expansion of exports and increase efficiency.

g) Industry was offered various services, such as guidance towards greater efficiency and productivity, through the Productivity Institute, the services of the Standards Institute, industrial research work carried out by Governmental research institutes or with Government financial support, etc..

TABLE 2. Industry's Share in the Economy, 1950 - 1966 (Selected Years, percentages, at current prices)

Industry's share of:	1950	1952	1954	1957	1960	1964	1966
Gross domestic product*	24.8	21.7	22.3	21.9	22.0	22.6	23.1
Exports of goods	82.0	87.8	83.3	80.8	84.8	80.2	79.1
Exports of goods and services	40.4	38.6	38.3	38.3	43.1	45.3	45.8
Stock of capital**	17.4	22.1	23.3	21.6	23.4	26.4	24.8
Gross investment in fixed assets	22.7	28.5	28.4	18.3	28.7	28.8	30.8
Employed persons	21.3	20.1	21.9	21.8	22.6	23.9	23.3

* At factor prices.

** At the beginning of the year; exclusive of housing.

2. INDUSTRIAL OUTPUT

Industrialization in Israel produced rising output and changes in the relative importance of industries and products and in the level of product quality. Output at 1966 prices rose from IL 1,450 million in 1950 to IL 6,900 million in 1966 — an annual average increase of more than 10%.

Taking the period as a whole, industrial production in real terms rose slightly faster than the overall national product. Because of changes in the relative prices of industrial products as compared with other products and services, the share of industry in the Gross National Product dropped from 25% in 1950 to about 23% in 1966, both in terms of current prices. The decline took place mainly during the early years.

TABLE 3. Development of Industrial Output, 1950 - 1966 (at 1966 prices)

	Output (IL million)	Annual growth rate (per cent)	Index (1950 = 100)
1950	1,450		100.0
1951	1,520	4.8	104.8
1952	1,470	-3.3	101.2
1953	1,615	9.5	111.4
1954	1,855	14.9	127.8
1955	2,090	12.7	144.1
1956	2,305	10.3	159.0
1957	2,540	10.2	175.1
1958	2,760	8.6	190.2
1959	3,195	15.8	220.3
1960	3,680	15.1	253.4
1961	4,215	12.7	290.7
1962	4,775	13.3	329.3
1963	5,400	13.3	372.0
1964	6,135	13.6	423.0
1965	6,760	9.6	466.4
1966	6,910	2.0	476.4
Average for the entire period		10.3	

Source: Estimates of Economic Planning Authority.

During the early 1950s industry's work was concerned primarily with the final processing of semi-finished products and the production of basic consumer goods, such as food, clothing and footwear. Added value constituted only a small portion of output.

Greater variety was introduced in output in response to the growth of local demand and the rising standard of living. As a result of a policy of protection by administrative means and protective tariffs, demand was mostly supplied by local production, which in many instances was of low profitability to the national economy. The replacement of imports followed two lines. On the one hand, finished products were made here to replace imported ones, raw materials being imported instead of such products, as vehicles, various consumer goods, home appliances and various types of machines and electrical equipment. On the other hand, the locally added value was increased by the vertical extension of production to earlier stages — in other words, the processing of raw materials or of semi-finished products. Such developments took place in the production of various basic chemicals, such as petrochemicals and other raw materials for plastic, synthetic yarns, cotton and wool yarn and fabrics, leather, etc.

Now industry is engaged in all stages of production, from the primary stage to the final product. The share of intermediate products, for the use of industry and other branches of the economy, has gone up because of vertical "deepening" of production and import substitution. Consumers' goods which used to be imported when the State of Israel was established are now manufactured here, and the production of equipment has been developed.

As a result of technological improvements, the utilization of advanced know-how and greater skill, the quantitative expansion of production has been accompanied by improvements in quality and design, which were achieved by the introduction of quality control methods. As incomes go up and import restrictions are relaxed, the Israeli consumer becomes choosier and demands better quality.

In 1966 total industrial production could be classified, by its utilization, as follows: about 34% went to consumption, private as well as public; 5% served for investment in industry and other branches of the economy; 16% were exported directly; about 45% constituted intermediate products for the use of industry and other branches of the economy.

The construction industry used more than 20% of the intermediate products, and agriculture more than 10%.

3. PROTECTION FOR LOCAL PRODUCTION

Until 1962 import policy was designed to give a high level of protection to local industry. This was accomplished by two methods: restrictions on the import of such goods as were produced, or could be produced, in Israel, and protective tariffs. The primary method was the restrictions on importation, while customs and levies were marginal methods, and until 1962 practically all industrial output was protected administratively against competitive imports. As a result, conditions were created for the establishment of many enterprises which manufactured at dollar costs that were too high or higher than expected in advance.

One of the main provisions of the new economic policy proclaimed together with the currency devaluation of 1962 was the cancellation of administrative protection for products made in Israel, and the subjection of local industry to competition by imports, while maintaining protective tariffs. This policy of import liberalization was aimed at improving the macro-economic allocation of resources, transferring factors of production from less to more efficient branches and the creating incentives for greater efficiency within the individual enterprise. A special public committee was set up to examine each individual product and advise the Minister of Commerce and Industry on its exposure to competitive imports. During the first stage, from 1962 until 1966, customs rates were generally set at a level which would not be too harmful to local production. Up to the end of 1966, administrative protection has been replaced by protective tariffs in respect of local production totalling about IL 3,300 million, some 85% of the relevant industrial output[1]. For various reasons it was decided that certain products would continue to enjoy administrative protection for an additional period. Considerable differences exist in the customs rates fixed within the framework of liberalization, and dispersion is great. Including rates per unit, the average of all customs on industrial products stood in 1966 at 90%.

TABLE 4. Local Output of Products Exposed to Competitive Imports Between 1962 and 1966, by Customs Rates

Customs rates (per cent)	Local output in 1966 (IL million)	Percentage of total	Cumulative percentage
Total	3,272	100.0	
Exempt	7	0.2	0.2
1–24	56	1.7	1.9
25–34	230	7.0	8.9
35–49	730	22.3	31.2
50–64	1,004	30.7	61.9
65–79	77	2.4	64.3
80–99	240	7.3	71.6
100–199	678	20.7	92.3
200 and above	250	7.7	100.0

Source: Ministry of Commerce and Industry.

In respect of 31% of exposed production the customs rate has been set at up to 49%, an additional 40% are subject to customs of 50 to 99%, and 29% are protected at a rate of more than 99%. Customs rates vary greatly between the different industries. Furthermore, consumers' goods have been subjected to higher customs rates than input items and investment goods.

The amount of competitive imports which can be credited directly to the policy of exposure reached $ 13.1 million in 1966, compared with $ 9.5 million in 1965, $ 4.7 million in 1964 and $ 2.9 million in 1963. Such competitive imports remained restricted to a limited number of products;

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[1] Excluding cases in which it would have been meaningless to expose the products to competition because they were not salable on the international market, or were already being exported, or were already exposed to competing imports. Source: Ministry of Commerce and Industry.

during 1966 some 60% consisted of 22 products, the most important of which were wooden furniture, washing machines, metal sheets, cotton fabrics, etc. Only in respect of a few items did competitive imports constitute a large percentage of local output, thus injuring production here.

There is no quantitative measure of the extent to which this exposure increased the efficiency of the industry, which was its major purpose, but its effect on most industries still seems to have been limited, though its influence did make itself felt in certain sub-branches, and it encouraged manufacturers to improve their production methods. In those fields, where imports did have an effect, demand was reduced, creating pressure for lower prices, or at least for the maintenance of present ones. Exposure did have a certain effect in respect of qualitative improvement. This holds primarily for the manufacture of consumers' goods, such as furniture, washing machines, shoes, kitchen mixers, etc.

At the end of 1966, although administrative protection had not yet been completely replaced by protective tariffs, the second stage of exposure was initiated. The purpose of this second stage is to lower, gradually and at fairly even intervels, the level of protection granted to local production. During the first stage customs rates were set individually for each product; during the second they will be lowered automatically, without treating each product separately. In November 1966 these customs rates were reduced by 5 to 10%, in order to lower the level of protection on the value saved by 10%. In April 1968 an additional 15% reduction of custom rates will be effected.

4. EXPORTS[2]

Industrial exports have increased twenty-one-fold, from $ 18 million in 1950 to $ 375 million in 1966 — constituting an average annual growth rate of 21%. In 1950 industrial exports were 50% of exports of goods; by 1966 this had risen to 80%. In respect of all exports — goods and services — the rise was from 40 to 46%.

Even greater was the contribution of industrial exports to the net foreign currency earnings, as measured by the added value. This rose 35-fold — from about $ 5 million in 1950 to $ 170 million in 1966.[3] Industry's share in the added value earned by all of exports of goods thus rose to two-thirds in 1966. This more rapid rise in the value added can be credited primarily to the vertical expansion of production in the different fields, the development of new products with high a percentage of added value, changes in export terms of trade — export prices rose more rapidly than those of imported input items — and the relative decline of diamonds, which have a low percentage of added value.

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[2] Data on exports do not include returns of diamonds, sales of old ships and planes, and unrequited exports, such as personal effects, gift parcels, etc.

[3] Source: 1950-calculated from estimates for 1953-Michaeli: Foreign Trade and Capital Imports in Israel, Tel Aviv, Am Oved, p. 70; 1966-Bank of Israel's Annual Report 1966, p. 46.

TABLE 5. Industrial Exports, 1950 – 1966*

Year	$ million			Annual growth rate (%)		
	Total	Diamonds (net)	Other	Total	Diamonds (net)	Other
1950	18.2	8.8	9.4			
1951	28.7	11.7	17.0	57.7	33.0	80.9
1952	25.9	11.5	14.4	-9.8	-1.7	–15.3
1953	35.6	12.8	22.8	37.5	11.3	58.3
1954	48.7	15.7	33.0	36.8	22.7	44.7
1955	52.8	20.3	32.5	8.4	29.3	-1.5
1956	60.5	24.7	35.8	14.6	21.7	10.2
1957	80.0	32.7	47.3	32.2	32.4	32.1
1958	81.3	33.2	48.1	1.6	1.5	1.7
1959	115.0	45.0	70.0	41.5	35.5	45.5
1960	146.6	56.4	90.2	27.5	25.3	28.9
1961	170.3	65.0	105.3	16.2	15.2	16.7
1962	205.7	82.6	123.1	20.8	27.1	16.9
1963	248.1	104.0	144.1	20.6	25.9	17.1
1964	280.3	118.2	162.1	13.0	13.7	12.5
1965	316.6	131.8	184.8	13.0	11.5	14.0
1966	375.2	164.7	210.5	18.5	25.0	13.9
Average for period				20.8	20.1	21.4

* Exclusive of diamond returns, sales of old ships and planes, and unrequited exports.

Sources: 1950 — 1955 – Central Bureau of Statistics;
1956 – 1966 – Ministry of Commerce and Industry.

During the early 1950s industrial output was almost completely directed towards the local market. Direct exports only absorbed about 4 to 5% of production, and they included a very limited list of products. Of output added during the years 1950 to 1966, about 20% went to direct exports, which by 1966 accounted for 16% of all industrial production. That year about 25% of total industrial production was exported, directly or indirectly, including components and intermediate products used to produce export goods. Nevertheless, Israeli industry is still oriented towards the local market. The percentage exported is supplied primarily by several distinctive export industries, most or all of whose output is sold abroad, and which account for most of the industrial exports. Exports may be classified into two major categories — diamonds and other industrial exports.

Diamonds are Israel's most important industrial export product, in which this country has achieved advantages due to professional and commercial know-how. In 1950, diamond exports totalled $ 9 million, about 50% of all industrial exports. In 1966 this had risen to $ 165 million, but constituted only 44% of the total, in spite of an annual average growth rate of about 20% throughout the entire period. The percentage of added value is low in respect of diamond exports; although it has improved, it does not exceed 25%. Because of this, diamonds only contribute 24% to the added value earned by total industrial exports.

In Israel the diamond industry had its beginnings during the Second World War, when it was paralysed in the Low Countries and experts from those places immigrated to Israel. At the end of World War II this development was interrupted, owing to the reactivation of traditional

European centers of the industry, and there was even a considerable decline when the War of Independence broke out. Diamond exports, however, began to go up again from 1950 on, and especially from the second half of the 1950s. This rise in the amount exported can be attributed to the booming demand for diamonds in the world market, owing to the rise in the American and European standard of living. Israel's share of the international commerce in polished diamonds has risen to 30%; in the medium-size stones, in which this country specializes, this goes as high as 80%. Israel has thus become an international center in the diamond trade, second only to Belgium. Part of the growth in the value of diamond exports is due to rising prices.

TABLE 6. Development of Industrial Exports, by Branches, 1956 – 66

Branch	$ million		Average annual growth rate 1956 – 66 (%)	Percentage of industrial exports	
	1956	1966		1956	1966
Total	60.4	375.2	20.0	100.0	100.0
Mining and quarrying	1.2	29.4	37.7	2.0	7.8
Food (incl. beverages and tobacco)	6.0	34.9	19.2	9.9	9.3
Textiles	4.2	37.0	24.3	7.0	9.9
Clothing and made-up textiles	1.6	8.5	18.2	2.6	2.3
Wood, wood products and furniture	2.5	7.5	11.6	4.1	2.0
Paper and cardboard and their products	0.7	1.8	9.9	1.2	0.5
Printing and publishing	0.4	2.9	21.9	0.7	0.8
Leather and leather products	0.1	1.1	27.1	0.2	0.3
Rubber and plastic products	3.9	12.2	12.1	6.5	3.2
Chemicals and petroleum refining	3.1	30.4	25.7	5.1	8.1
Non-metallic mineral products	3.8	4.9	2.6	6.3	1.3
Diamond industry	24.7	164.7	20.9	40.9	43.9
Basic metal industry	1.9	8.4	16.0	3.1	2.2
Metal products	0.5	5.1	26.2	0.8	1.4
Machinery	1.1	13.9	28.9	1.8	3.7
Electric and electronic equipment	0.3	1.5	17.5	0.5	0.4
Transport equipment	1.8	3.9	8.0	3.0	1.0
Miscellaneous manufacturing	2.6	7.1	10.6	4.3	1.9

Source: Ministry of Commerce and Industry: Israel Exports.

Industrial exports other than diamonds expanded during the entire period at an average annual rate of 21.5%, reaching $ 215 million in 1966, compared with $ 9.5 million in 1950. Reliable data on the exports of the different branches of industry are available only for the period beginning with 1956, and these are presented in Table 6. Especially rapid growth was registered in the export of mineral products, chemicals and fuel, machinery and textiles.

Industrial exports are made of a large number of different products, but the outstanding feature is concentration on a number of major products and of categories of product, which account for most of the exports. In addition to diamonds, the important export products are: minerals — potash, copper cement and phosphates; citrus products; refined fuels; products of the military industries; yarns — cotton and synthetic; rubber tyres; edible oils and plywood. Most of these are primarily export products.

with all or most of the output aimed at foeign markets. Other industrial exports are dispersed over a wide spectrum of industries and products, which are sold abroad on a relatively small scale, with only a small portion of the output exported.

Concentration is even greater in the newly added exports, than it is for all exports. Of the $ 66.5 million expansion achieved between 1963 and 1965, exclusive of diamonds, eight products account for 65% (see Table 7). In 1966 these items accounted for 43% of all industrial exports, exclusive of diamonds. Together with diamonds they constituted 82% of the expansion in industrial exports during the years 1963 – 1966.

TABLE 7. Additional Exports of Major Products, 1963 – 1966

	Additional Exports ($ million)	Percentage of additional exports	Cumulative percentage
Refined fuels	8,0	12,0	12,0
Copper cement	7,9	11,9	23,9
Potash	7,3	11,0	34,9
Citrus products	6,8	10,2	45,1
Synthetic yarns and fibers	4,8	7,2	52,3
Phosphates	3,6	5,4	57,7
Cotton yarns	2,5	3,8	61,5
Edible oils	2,2	3,3	64,8
Total	43,1	64,8	64,8
Total additional exports, exclusive of diamonds	66,4	100,0	100,0

TABLE 8. Industrial Exports*, by Continents and Economic Organizations, 1966 (%)

By Continents	
Total	100,0
Europe	54,6
Asia	15,4
Africa	4,7
America	22,8
Australia	0,6
Destination not specified	2,9
By Economic Organizations	
Total	100,0
European Economic Community	26,1
European Free Trade Area	18,6
Comecon	4,4
Other countries	50,9

* Gross exports, including diamond returns, sales of ships and planes, and unexplained exports.

Source: Ministry of Commerce and Industry, Israel Exports

Table 8 shows the distribution of industrial exports by continent and market areas. There have been slight fluctuations in these destinations during the last four years, but without any clearly discernible trend. In 1966 some 76% of industrial exports went to Europe (54.5%) and America (21.5%), and 20% to countries in Asia and Africa. The European Common Market receives 26% of all Israeli industrial exports and the European Free Trade Area 18.5%, only 4.5% going to Comecon countries.

5. INVESTMENT IN FIXED ASSETS[4]

At the beginning of the 1950s Israeli industry was technologically backward. Most plants were relatively small and used outdated equipment, which in part dated back to the 1930s.

The rapid growth of industry was made possible by a high level of investment during most of the period reviewed. Between 1949 and 1966 some IL 5,200 million, in terms of 1966 prices, were invested in manufactures, mining and quarrying.[5] This constitutes about 28% of all investments, exclusive of housing, and some 17% of the total including housing. To a large extent these investments were made possible by the extensive import of capital. The Reparations Agreement exerted considerable influence on the financing of industrial investments, and it

TABLE 9. Gross Investments in Industry, 1950 – 1966 (at 1966 prices)

Year	(IL millions)			Annual rate of growth (per cent)		
	Total for industry	Manufacture and construction equipment	Mining and quarrying	Total for industry	Manufacture and construction equipment	Mining and quarrying
1950	200	..	..		..	..
1951	280	..	..	40,0	..	..
1952	227	..	..	-19,0	..	..
1953	176	..	..	-22,5	..	..
1954	172	..	..	-2,3	..	..
1955	154	113	41	-10,5	..	..
1956	211	179	32	37,0	58,4	-22,0
1957	193	165	28	-8,5	-7,8	-12,5
1958	278	265	13	44,0	60,6	-53,6
1959	357	335	22	28,4	26,4	69,2
1960	329	305	23	-7,8	-9,0	4,5
1961	396	353	42	20,4	15,7	82,6
1962	420	344	76	6,1	-2,5	81,0
1963	475	391	84	13,1	13,7	10,5
1964	514	427	87	8,2	9,2	3,6
1965	488	437	51	-5,0	2,3	-41,4
1966	339	302	37	-30,5	-30,9	-27,5

.. No data available.

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[4] Sources of data in this section: Gross investment – Central Bureau of Statistics; capital stock – Dr. A. L. Gaathon, Economic Productivity in Israel, 1950–1965 (in course of publication).

[5] Including investment in construction machinery. Statistically, it is difficult to differentiate between machinery for construction and for industry; data enabling this to be done are available only as from 1955. Unless specifically stated otherwise, figures given here include construction equipment.

motivated many industrialists here to make new investments, and to replace old equipment. Between 1954 and 1962 industrial machinery worth about $ 68 million was imported to Israel under the Reparation Agreement.

No reliable data are avaiable on the breakdown of investments by industry. Partial data, however, indicate that during the last ten years most of the investment capital went into mineral extraction, food, textiles and clothing, and chemicals, and in certain years also into non-metallic minerals. The composition of industrial investments was influenced by the considerable expansion which took place in local demand during most of the period. The rapid expansion of the local market with the rise in consumption caused a large part of the investments to be directed towards manufacture for local consumption, and not towards export. The division of total investments in fixed assets into construction and earthworks, on the one hand, and machinery on the other, was subject to fluctuations. In industry other than mining, however, machinery on the average accounted for two-thirds of the total, and construction works for one-third of gross investment. Construction and earthworks constituted a large proportion of the investments in mining and quarrying — approximately 55% of all the investments in this industry during the years 1962–1966. This was primarily due to work on dams and evaporation pans for the expansion of the Dead Sea Works, and the removal of over-burden from copper and phosphate deposits.

TABLE 10. Stock of Capital, Capital/Output Ratio and Capital per Employed Person*, 1950 – 1966 (at 1966 prices)

Year	Stock of capital** (IL million)	Annual growth of stock of capital (%)	Ratio of capital to output+	Capital per employed person (IL)++	Growth of capital per employed person (%)
1950	585		0,40	6,340	
1951	740	26.5	0,49	6,890	8.4
1952	973	31.5	0,66	8,910	29.3
1953	1,165	19.7	0,73	10,420	17.1
1954	1,294	11.1	0,75	10,630	2.1
1955	1,437	11.1	0,69	11,600	8.8
1956	1,575	9.7	0,68	12,130	4.6
1957	1,770	12.3	0,67	12,780	5.3
1958	1,950	10.3	0,67	13,300	4.8
1959	2,202	12.9	0,67	14,280	7.1
1960	2,535	15.0	0,69	15,550	8.8
1961	2,793	10.5	0,66	15,700	1.0
1962	3,111	11.4	0,65	15,960	1.7
1963	3,525	13.5	0,65	16,750	4.9
1964	3,901	10.7	0,63	17,800	6.1
1965	4,233	8.5	0,63	19,050	7.1
1966	4,475	5.7	0,65	20,160	5.9
1967	4,613	3.1			

* All data include investments in construction machinery.

** At the beginning of each year.

+ Capital stock at beginning of year, divided by output during that year.

++ Capital stock at beginning of year, divided by average number of employees during that year.

Estimates place the part of investments used to replace discarded equipment at IL 1,170 million,[6] while IL 4,030 million went to increase the stock of capital. This raised the stock of capital, in terms of 1966 prices, from IL 585 million at the beginning of 1950 to IL 4,612 million at the beginning of 1967, an average annual increase of 13%. This growth rate suffices to double the stock of industrial capital every five to six years.

Industry's share in the economy's total stock of capital, except for housing (at current prices), rose from 17.5% at the beginning of 1950 to 23.5% at the beginning of 1967; its share in the total stock including housing rose from 10% to nearly 15% during the period.

The stock of capital in industry increased more rapidly than output or the number of persons employed; i.e., capital intensity increased. Capital investment per worker rose more than threefold from IL 6,540 in 1950 to IL 20,160 in 1966 (both in terms of 1966 prices) — at an annual rate of 7.3%. The ratio of capital to output rose from 0.4 in 1950 to 0.72 in 1953 and then gradually declined to 0.63 in 1965. In 1966 the ratio again rose to 0.65, owing to the fact that the productive capacity was not fully utilized. One of the reasons for greater capital intensity lies in the increasing profitability of technological changes, which depend on a certain minimum size of the production unit. Rapid expansion of local demand has led to certain increases in the size of production series, which facilitated technological changes. Capital intensity resulted from the substitution of machines for workers in the various branches of industry, as well as from the greater relative importance of capital-intensive industries.

The high rate of investment was made possible, to a large extent, by relatively low-interest loans for investment made available by the public sector, either directly by the Government or, upon its recommendation, by banks and financial institutions, and by direct public investments in industry, primarily in the extraction of natural resources. Public financing made many additional investments possible by providing only part of the funds necessary for any individual project. It accounted, on the average, for 35% of investments in industry between 1950 and 1966, contributing a larger share in the fifties and a smaller one in the sixties. Until 1957 loans were given to industry directly from the Development Budget. At the end of that year the Government, together with public and private bodies, set up the Industrial Development Bank, which was to become the main financial instrument for investments in industry. The Bank's funds are derived from the Government and from the general public, by means of share and bond issues.

Financing from public sources was the major factor in directing investments into priority industries and regions from the point of view of the national economy. Preferred enterprises, established in areas where industrialization was necessary, received loans equal to a larger portion of the total investment. In development areas public finance provided a larger portion of industrial investment than in the center of the country. Loans from public sources went mainly to the textile, clothing, metal, food and chemical industries.

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6) Estimates of discarded equipment were not computed directly, but are based on the historical data on investment in industry, together with estimates of the equipment's expected length of service.

6. EMPLOYMENT AND OUTPUT PER WORKER

During the years 1950 — 1966 industry absorbed 132,000 additional workers, increasing total industrial employment almost 2.5 times — from about 90,000 in 1950 to 222,000 in 1966, while employment in industry rose at an annual average rate of 5.8% and output went up even faster, by 10.3% a year. In other words, industrial development was accompanied by increasing productivity, output per worker going up on the average by 4.2% annually. During the two years 1966 and 1967 the trend was towards lower industrial employment, owing to the deepening economic recession.

TABLE 11. Employment and Output per Worker in Industry, 1950 – 1966.

Year	Employment			Output per Worker (at 1966 prices)	
	Employees '000	Average annual increase (per cent)	Industrial employment as percentage of all persons employed	IL '000	Average annual increase (per cent)
1950	89.4		21.2	16.2	
1951	107.4	20.1	20.9	14.2	-12.7
1952	109.2	1.7	20.1	13.5	-4.9
1953	111.7	2.3	20.2	14.5	7.4
1954	121.5	8.8	21.9	15.3	5.5
1955	124.0	2.1	21.5	16.9	10.5
1956	130.0	4.8	21.9	17.7	4.7
1957	138.8	6.8	21.6	19.0	7.3
1958	146.7	5.7	22.4	19.7	3.7
1959	153.7	4.8	22.6	21.2	7.6
1960	162.9	6.0	23.2	22.5	6.1
1961	177.8	9.1	24.2	23.7	5.3
1962	194.7	9.5	25.1	24.5	3.4
1963	210.4	8.1	25.8	25.7	4.9
1964	221.6	5.3	25.9	27.8	8.2
1965	224.5	1.3	25.5	30.0	8.0
1966	222.0	-1.1	25.3	31.1	3.7
Average for the period		5.8			4.2

Source: 1950 – 1955 – Unpublished statistics by Dr. Gaathon.
1956 – 1966 – Bank of Israel; Annual Reports.

About 30% of the additional employment during 1950–1966 has been absorbed by industry. This is a higher proportion than that of industrial employment in 1950. Industrial employment thus rose gradually from 21% of all employed persons in 1950, to 25% in 1966. In spite of this increase, the percentage of industrial workers here is still lower than in developed countries like the United States, Western Germany, France, Great Britain, Belgium, etc.

Many of the new workers in industry, especially those absorbed during the 1950s, were new immigrants without industrial training, experience or tradition, and the general educational level of many of them was low. The level of skill among industrial workers rose during this period to a considerable extent, thanks to training programs in which the Government and the Histadrut played important roles. Management also developed and improved by practical experience and advanced training at home and abroad, but one of Israel industry's main problems still is the shortage of managers with professional qualifications in administration and marketing, on a level suitable for modern enterprises.

During most of the 1950s industry enjoyed a large supply of manpower, because of the rapid growth of the population of working age, though there was a shortage of highly skilled personnel. During the 1960s, however, until the middle of 1965, the shortage of workers, especially a more severe shortage of skilled people, constituted a serious limitation on industrial development and industry's ability to supply all the demand in local and foreign markets.

The overall increase of output per worker, which averaged 4% a year during the entire period, was composed of an absolute decline during the early years and an annual 6% rise between 1954 and 1966. This increase in average output per worker in Israeli industry is the result of many factors, the most important of which are specified below.

The first factor was the rise in capital intensity in industry, which reflects greater mechanization in existing industries and the establishment of new, capital-intensive ones, such as mining and quarrying, basic chemicals and petroleum refining, paper, tires, etc. Expansion of the stock of capital in industry was accompanied by technological innovations and more-modern methods of production, which save manpower and increase output per worker. The increasing size of enterprises and the larger series of production also made technological changes, as well as more efficient management and marketing, possible.

The second factor was the rising level of skill among industrial workers. Others were improvements in management and the organization of production and marketing; greater utilization of productive capacity in several years, especially 1953–55 and 1963–65; and the introduction of incentive pay systems, on the basis of norms and premiums.

7. COMPOSITION OF INDUSTRY BY BRANCH

Although no reliable data are available on the development of the various branches of industry, it is possible to indicate the following tendencies:

The percentage of employment in industries, making consumers' goods — food, textiles, clothing, footwear and furniture — has declined; relative declines are also to be noted in non-metallic minerals and building carpentry, both of which supply inputs to the construction industry; the metal working, machinery and transport equipment industries have grown in relative importance; expansion also took place in the rubber, plastics and chemical industries.

In 1965 the most important branches of industry were food, textiles, transport equipment and machinery, which contributed 45.5% to total industrial output and employed 43% of industrial employees (see Table 12).

TABLE 15. Employment and Output, by Branch of Industry, 1965 (percentages).

Branch	Employment	Output
Total	100.0	100.0
Mining and quarrying	1.8	5.6
Food (incl. beverages and tobacco)	15.4	21.7
Textiles	11.8	10.8
Clothing and made-up textiles	6.6	3.8
Wood, wood products and furniture	8.8	6.0
Paper, printing and publishing	5.5	4.8
Leather and leather products	3.3	1.8
Rubber and plastic products	3.8	5.0
Chemicals and petroleum refining	5.8	8.0
Non-metallic mineral products	5.3	6.6
Diamond industry	3.5	6.9
Basic metal industry	3.0	5.5
Metal products	7.8	6.8
Machinery	7.3	6.3
Electric and electronic equipment	4.0	5.6
Transport equipment	10.5	6.9
Miscellaneous manufacturing	3.4	1.1

Source: Calculated from data of CBS Industrial Census, 1965.

Variations exist between certain industries' share of output, and of employment. Those that are more capital-intensive, and have a higher output per employee, contribute more to production than to employment. This is the case in respect of mining and quarrying, food, rubber and plastics, chemicals and petroleum refining, non-metallic minerals and basic metals. In labor-intensive industries, output per worker is lower, and they have a higher share of employment than of total production. Such a situation is typical of textiles, clothing, leather and footwear, wood products and furniture, paper and printing, metal products, machinery and electrical and electronic equipment.

The composition of Israeli industry by branch differs from that of Western European countries and the United States in several respects. First of all, the relative share of the food and textile industries is larger in Israel than in developed countries. Secondly, the metals and machinery industries (exclusive of basic metals, which depend largely upon the location of mineral deposits) are more important in developed countries than in Israel. In respect of chemicals the situation is similar. The roles played by the metal, mahcinery and chemical industries are usually taken as indicators of the degree of industrialization in various countries. A comparison of the composition of Israeli industry, by branch, with that of developed countries indicates that Israel is still at an early stage of industrialization.

TABLE 13. Industrial Output, by Major Branches of Industry in Various Countries, 1959 (percentages)

Branch	France	West Germany	Italy	Holland	Great Britain	Denmark	Greece	E.E.C.	Western Europe	U.S.A.	Israel (1958)
Total	100,0	100,0	100,0	100,0	100.0	100,0	100,0	100,0	100,0	100,0	100,0
Mining and quarrying	8,5	5,2	3,6	2,7	7.2	—*	5,1	6,4	6,6	8,2	2,6
Food, beverages and tobacco	6,2	16,3	11,0	22,5	9,9	17,8	20,8	12,2	12,1	11,4	21,7
Textiles	7,3	8,0	9,6	8,3	6,6	6,2	21,6	8,4	7,9	3,2	14,6
Basic metals	8,2	6,9	11,0	3,1	7,8	2,1	0,8	8,8	8,5	7,0	3,3
Metal products	29,4	30,9	23,3	32,9	39,1	35,6	9,0	29,5	32,0	35,2	22,2
Chemicals	15,1	12,2	24,0	11,5	9,6	8,3	19,6	14,3	12,1	20,2	6,0
Other industries	25,3	20,5	17,5	18,0	19,8	30,0	23,1	20,2	20,8	24,7	28,0

* Included elsewhere.

Source: O.E.E.C. Industrial Statistics, 1900 – 1959.

8. STRUCTURE OF INDUSTRY

Israeli industry's basic problem lies in its high costs, compared with those prevailing in international markets. This reduces competitiveness on both local market and export markets. This problem is closely linked to the structure of industry: small plants, fragmentation of production and a limited degree of competition. This is the result of the fact that local output is mainly aimed at local consumption, while the local market is limited and covers a large variety of products. Protection of local industry enabled it to satisfy most of this demand.

Industrial development led to an enlargement of plants. Older establishments expanded production, while new ones were on the average larger than those existing before 1948. In spite of this, most Israel industrial enterprises — even the largest among them — are still small, compared with firms in the same fields in developed countries, which are Israel's main competitors. In addition, production within each plant is dispersed over a large variety of products, and compared with other countries there is but little specialization. As a result of this dispersal, only part of the stock of capital is usually utilized. Small enterprises are at a disadvantage in production, distribution and in management.

At the same time production is also quite concentrated. In most fields a large share of production is concentrated in a small number of plants. The greater, in comparison with the potential market, is the sum of capital necessary, for technological reasons, to start a new enterprise, the more restricted will competition in this field be. Most of Israeli industry operates under conditions of oligopoly, with a small number of firms controlling most of the output in a certain field. According to a research study on competition in Israeli industry (excluding mining and quarrying and diamonds)[7] in 1961, oligopolies accounted for 56% of industrial production, monopolies and duopolies (industries in which only two firms operate) making up another 15.5% and those in which single leading firms set the price level account for an additional 10%. Considerable competitiveness existed in industries with only 18% of the total industrial output.

The oligopolistic structure of industry led many companies to form cartels, limiting competition through agreed prices, allocation of production quotas, and so forth. At times such cartellization enjoyed government support, primarily in order to expand exports. Until 1960 no legal limitation existed on the formation of cartels. In that year the Restrictive Trade Practices Law went into effect, making the existence of cartels subject to approval by a special public council, and in 1963 the law was amended. Cartels are not outlawed, but they must apply for approval, which is granted only if they prove to be in the public interest. It is accepted in Israel that cartels are not necessarily disadvantageous to the economy, especially within a small economy such as exists here; in this respect the Israeli approach is similar to that common in Britain. In a few cases the Government has supported applications for the approval of cartels, especially if they were designed to increase exports.

At this time 40 cartels are in effect in Israeli industry, with the approval of the public council. More than half of these are in the food and chemical industries. In addition, there are apparently some unofficial agreements between firms, in order to limit competition, which the council has not been able to track down. Most of the approved cartels have for their declared objectives the extension of exports, greater efficiency in production, prevention of "destructive" competition, and joint research.

Although approval for the creation of a cartel is granted in order to expand exports and make production more efficient, at least in some of the cases these goals have not been reached, while cartellization has led to higher prices in the local market.

9. ECONOMIC SECTORS IN INDUSTRY[8]

Industrialization in Israel, like economic development in general, has been characterized by the integration of private, Histadrut and public initiative. Within these sectors there are various forms of economic initiative and ownership. The Histadrut sector, for instance, includes cooperatives, kibbutz-owned enterprises, and firms wholly owned by Hevrat Ovdim (the economic arm of the Histadrut). The public sector is composed of companies owned by the Government, the National Institutions — Jewish Agency, Jewish National Fund and Keren Hayesod — and the local authorities.

The large majority of industrial enterprises — 93% — belong to the private sector; in 1965 these employed 76% of all industrial workers; 5.5% belong to the Histadrut sector, with 15% of the total employment, and only 1.2% to the public sector, with 8.5% of industrial employment.

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[7] See A. Arin, Y. Gabbay and E.A. Zuherman; "Competition in the Branches of the Economy." Economic Quarterly, No. 45-46.

[8] Statistics cited in this section are based on the CBS census of Industry, and do not cover military industry.

Of the 19,000 persons employed in 1965 in publicly owned industry, 70% worked in Government companies. Public-sector enterprises are large, and concentrated in capital-intensive industries, such as mining and quarrying, chemicals and petroleum refining, and transport equipment (almost exclusively in the shipyards and Israel Aviation Industries). Output per worker is larger in public-sector enterprises, on the average, than in the private and Histadrut sectors. To a large extent this is due to greater capital-intensity.

The plants in the Histadrut sector are also larger than the average in the private sector and are concentrated, generally, in capital-intensive industries, such as basic metals, non-metallic minerals, wood and wood products — primarily plywood — and mining and quarrying — mainly quarries. Because of greater capital-intensity, output per worker is higher in the Histadrut sector than the average in the private sector. In 1965 about 33,000 persons were employed in Histadrut industry; 48% of these worked in plants owned by Hevrat Ovdim, 31% in kibbutz industries and 21% in cooperatives.

In the private sector in 1965 some 93% of the total of 168,000 worked in plants which employed labor, with the remainder in enterprises operated only by their owners.

During the period, the trend has been towards a relative increase in the private sector, in respect of both the number of enterprises and of employees. The same holds, for obvious reasons, for the public sector; the relative importance of the Histadrut sector, on the other hand, is declining.

TABLE 14. Persons Employed in Industry, by Sectors and Major Branches, 1965 (percentages)

Branch	Total	Private sector	Histadrut sector	Public sector
Total industry	100.0	76.3	151	8.6
Mining and quarrying	100.0	54.8	210	24.2
Food (incl. beverages and tobacco)	100.0	74.2	206	5.2
Textiles	100.0	92.3	24	5.3
Clothing and made-up textiles	100.0	88.0	57	6.3
Wood, wood products and furniture	100.0	74.9	229	2.2
Paper and carboard and their products	100.0	91.9	81	–
Printing and publishing	100.0	78.5	132	8.3
Leather and leather products	100.0	91.0	79	1.1
Rubber and plastic products	100.0	84.8	128	2.4
Chemicals and petroleum refining	100.0	61.7	97	28.6
Non-metallic mineral products	100.0	64.4	255	10.1
Diamond industry	100.0	99.8	02	–
Basic metal industry	100.0	51.7	480	0.3
Metal products	100.0	82.7	139	3.4
Machinery	100.0	67.5	212	11.3
Electric and electronic equipment	100.0	75.6	156	8.8
Transport equipment	100.0	54.5	203	25.2
Miscellaneous manufacturing	100.0	88.8	68	4.4

Source: CBS Census of Industry 1965, Stage A. Military Industry is not included.

B. INDUSTRIAL DEVELOPMENT, BY PERIODS

1. 1950—1954

The period from 1950 to 1954 was characterized by rapid population growth, due to mass immigration, which created problems of absorption and the supply of essential needs in food, housing and various services, while there was a shortage of foreign currency.

Industrial output expanded more slowly than the national product during 1950—54, rising by only 6.5% a year. In 1950 it had constituted 25% of the net product, at current prices; by 1954 this had declined to 22.5%.

Industry was incapable of supplying the demand, because part of the investments made at the time had not yet begun to yield, and also because of raw material shortages, which were due to shortages of foreign exchange.

TABLE 15. Major Indicators of Industrial Development, 1950 – 1954 (at 1966 prices)*

	1950	1954	Average annual growth rate (%)
Output (IL million)	1,450	1,855	6.4
Exports ($ million)	18.2	48.7	27.8
Diamond exports, net	8.8	15.7	15.6
Other industrial exports	9.4	33.0	36.9
Stock of capital (IL millions)**	585	1,294	22.0
Employees ('000)	89.4	121.5	8.0
Output per worker (IL '000)	16.2	15.3	-1.4
Capital per worker (IL '000)	6.5	10.6	13.0

* Exports in millions of dollars, at current prices.

** At the beginning of the year; includes construction machinery.

From the beginning of 1950 to the end of 1954, IL 1,050 million were invested in industry, in terms of 1966 prices. During the first three of these years the level of investment was relatively high — about IL 235 million a year on the average; during the last two years, 1953 and 1954, it was lower, about IL 175 million a year. To a large extent these investments were made possible by loans received from the U.S. Export-Import Bank, which were utilized, inter alia, to finançe imports of machinery and industrial equipment. Industrial investments amounted to 19% of all investments in this period, and 30% of investments other than housing.

During those early years, Government policy emphasized agricultural development, housing for new immigrants and the creation of various infrastructure services. In the years 1949—1953, industry, including mining and quarrying, received only 11% of the Government's Development Budget, the sum allocated to it being only 41% of the allocation for agriculture (without irrigation projects), or 31% if irrigation projects are included.[9]

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9) See: H. Ben-Shahar: Interest Rates and Price of Capital in Israel.—Israel Economic and Sociological Research Project in Cooperation with the List Institute, Basle (preliminary draft) Table III-1.

The stock of capital in industry increased at an average rate of 22% a year. Since output grew at a much slower rate, it would seem that, especially during the early part of this period, there was considerable excess capacity in industry, explainable perhaps as the result of raw material shortages.

During these years industry absorbed 32,000 additional workers, raising the total from 89,500 in 1950 to 121,500 in 1954, an average annual increase of 8%. Industry absorbed approximately 24% of the additional employed persons during the period. Industrial employment went up more quickly than output, with a resulting 5% decline in output per worker. This was primarily the result of excess capacity in both machines and manpower.

Industrial exports went up quickly, from $18 million in 1950 to $49 million in 1954, an annual growth rate of 28%. About 23% of additional production went to exports, the share of which rose from 4% to 8% of total output. The growth of diamond exports was behind that of other industrial exports during this period — only 15.5% a year, while other industrial exports gained 37% annually, so that diamonds declined from 48% of all industrial exports in 1950 to only 33% in 1954.

Expansion of exports was to a great extent made possible by a change in the Israel pound exchange rate. In 1950 the official rate was IL 0.357 per dollar. In February 1952 the pound was devalued, and three official rates of exchange established. The first rate, IL 0.357 per dollar, was retained for diamond exports; a second rate of IL 0.714 per dollar applied to citrus products and some other items; the third rate of IL 1 = $1 applied to all other exports. During the following two years, 1953 and 1954, several changes were made in the system of exchange, which in effect eliminated the first two rates, and made IL 1 = $1 the official rate, while the effective rate for exports became IL 1.80 = $1, through the payment of an IL 0.80 export premium — at first for exports other than diamonds, but in 1954 covering diamonds as well.

The 1952 devaluation, and the arrangements made to increase the effective exchange rate for exports, made foreign sales more profitable. This helped industrial exports to expand during 1953 and 1954 at an annual rate of 37%, after 1952 had been a low point in this respect.

2. 1954—1964

This period was one of rapid industrial development, in which the Government had a large share. Israel's development policy began to change gradually during the middle 1950s, shifting the emphasis from agriculture to industry. Agriculture could no longer serve as a basis for the absorption of additional workers. In addition to this, the recognition ripened that the economy would have to develop industry with a view to closing the balance of payments gap through greater exports and the replacement of imports, which necessitated rapid industrial development. The share of industry, including mining and quarrying, in the expenditure of the Development Budget went up from 11% during the fiscal years 1949 to 1953, to 16% in 1954 and 1955, and 19% the fiscal years 1956—1959.[10]

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10) Source: Ben-Shahar: op. cit.

TABLE 16. Major Indicators of Industrial Development, 1954 – 1964 (at 1956 prices)*

	1954	1959	1964	Average annual growth rate (%)		
				1954–1964	1954–1959	1959–1964
Output (IL million)	1,855	3,265	6,155	12.7	12.0	13.5
Exports ($ million)	48.7	115.0	280.3	19.1	18.8	19.5
Diamond exports, net	15.7	45.0	118.2	22.4	23.5	21.3
Other industrial exports	33.0	70.0	162.1	17.3	16.2	18.3
Gross investment (IL million)**	172	357	514	11.6	15.7	7.5
Stock of capital (IL million)**	1,294	2,202	3,901	11.7	11.2	12.1
Employees ('000)	121.5	153.7	221.6	6.2	4.8	7.6
Output per worker (IL '000)	15.3	21.2	29.8	6.2	6.7	5.6
Capital per worker (IL '000)	10.7	14.3	17.6	5.2	6.0	4.2

* Exports, at current prices.

** Includes construction machinery; capital stock at beginning of year.

Industrial output rose during this period by nearly 13% per annum, on the average. The population increased much more slowly than during the previous period, but per capita consumption went up rapidly, by an average of more than 5% annually. This caused a rapid rise in domestic demand for industrial products and a change in the composition of demand, with a shift to items of higher quality, such as durables.

Construction activity also increased considerably during this period, causing expansion in the industries which supplied it with building materials and other inputs.

During the years 1954 to 1959 output rose somewhat more slowly, by about 12% a year, compared with 13.5% annually during 1959 to 1964. More rapid expansion during the 1960s was the result of booming local demand and a higher degree of building activity. Exports rose only slightly more rapidly during the 1960s than in the 1950s.

Import liberalization had begun in 1955, with the gradual elimination of rationing in respect of raw material imports and a limited number of consumers' goods. This was accompanied by the automatic allocation of import licenses, while duties and levies were fixed at a level calculated to keep imports within the quantitative limits previously set by rationing. Until 1962 the main purpose of this liberalization was the absorption of excess profits previously enjoyed by the importers under the system of import quotas.

From 1954 until 1964 industrial exports rose at an annual rate of 19%, from $ 49 million in 1954 to $ 280 million in 1964. This increase in direct exports absorbed about 16% of the output added during the period. Diamond exports rose much more rapidly than during 1950—54, by about 22% a year, compared with 15%. Other industrial exports, however, went up during this ten-year period by 17% a year, compared with double that rate during the previous five years. With diamond exports going up more quickly than those of other industrial products, their share of all industrial exports increased from 32% in 1954 to 42% in 1964.

The rapid rise in the local price level in comparison with world prices forced the Government to take action in support of exports. Between 1955 and February 1962 the official rate of exchange in Israel was IL 1.80 per dollar, and until 1962 export encouragement took the form of premium payments, direct as well as indirect. Three methods were used: special-purpose foreign currency accounts, direct premium payments and clearing agreements.

The system of special purpose foreign currency accounts — known in Israel as "Pamaz" — was applied to all industrial exports other than diamonds. Exporters were permitted to retain in such accounts part or all of the currency received by them from abroad, and to utilize it for the purchase abroad of raw materials. It was intended that part of these raw materials would be used to produce for further exports, while the rest would go to production for the local market, or would even be sold locally, unprocessed. This arrangement was introduced and maintained during a period when imports of raw materials were effectively restricted by quotas. The Pamaz system gave exporters a monopolistic position in respect of raw material supplies outside the regular quotas. This resulted in windfall profits, which constituted indirect subsidies for export.

The size of the premium resulting from this arrangement differed from one industry to another and at different periods, creating an effective exchange rate much higher than the official one. In 1954 and 1955 the Pamaz system was applied to a large portion of exports, but in subsequent years its importance gradually declined, as direct premium payments were introduced and the liberalization of raw material imports also weakened the monopolistic position of the exporters. At the end of 1959 the system was finally eliminated.

Under the direct premium system, additional payments were granted in respect of added value, while foreign inputs were bought at IL 1.80 per dollar, free of customs and other levies. The system was initiated at the end of 1954, when it was applied primarily to diamonds, as compensation for their exclusion from the Pamaz system. Beginning with 1956, industrial exports other than diamonds received a uniform premium on their added value — at first IL 0.50 per dollar, which was raised in 1957 to IL 0.85 per dollar. Sales to certain countries, especially in West Africa, enjoyed an additional premium of IL 0.35 per dollar of added value, bringing the total premium to IL 1.20 per dollar. The diamond industry, in effect, received the same premium as other industrial exports, through special arrangements made for it.

In 1959 premium arrangements for several industries were changed, marking a departure from the uniform arrangements previously in force. During 1959 to 1961 there were also "marginal premium" arrangements, paying higher premiums in respect of additional exports, while existing exports only received the regular premium. These arrangements were made to prevent exporters receiving economic rent. The changes in premium rates led to great differentiation between the export incentives available to different industries, and even to different enterprises.

The effective exchange rate — the official rate, plus income from premiums and profits on Pamaz transactions — rose from IL 1.82 per dollar of added value on the average of all industrial exports other than diamonds in 1955 to IL 2.77 in 1961. In respect of diamonds the effective rate went up from IL 2.20 in 1955 to IL 2.65 in 1961.[11]

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[11] See: J. Baruch, "Import Taxes and Export Subsidies in Israel, 1955–1961," Bank of Israel Bulletin 18.

Exports were also encouraged by means of clearing agreements with various countries, which enabled Israel to export products at prices above those prevailing in the free world market, thus creating a subsidy for exporters. Clearing agreements covered industrial exports in the main. Towards the end of the 1950s their importance declined.

The devaluation of February 1962 raised the official rate of exchange from IL 1.80 to IL 3 per dollar, and eliminated the entire system of direct export incentives, except for the equalization funds in the textile, clothing and plywood industries. In effect devaluation raised the effective rate by 13% for diamonds and 8% for other industrial exports.

The expansion of industrial exports, especially of products other than diamonds, slowed down considerably from 1962 to 1964 as compared with previous years; industrial exports expanded on the average by 18% a year and without diamonds, by 15.5% a year.

As costs of Israel industry are markedly high in comparison with world market prices, exports, which have to compete with international prices, are less profitable than local sales. The boom conditions that prevailed in the local market during the last three years of the period lowered the relative profitability of exports as domestic prices went up. This again created a need for export incentives.

During the years immediately following devaluation, the encouragement of exports took the form of various supports extended by the Government, designed to lower costs. In a few industries — primarily textiles, clothing and plywood — exporters received high incentive payments from industry funds. Indirect support for export also existed before devaluation, but then it was of limited importance compared with premiums. After devaluation indirect support became the main method of export encouragement. The principal incentives were: relatively low-cost export credits; participation in transport costs and port fees, foreign trade risk insurance, marketing, advertising and market research; cash grants to export companies; participation in research and development expenses; reduction in the cost of agricultural raw materials, etc.

With Government help, industry funds giving high incentive payments had been established, even before the 1962 devaluation, for the textiles, clothing and plywood industries. Their income is derived from levies on imported, and in some instances also on locally manufactured, raw materials. The rates of both levies and incentives were fixed by the Government. The system of support through industry funds, especially in the textiles and clothing industries, led to the creation of different incentive rates for different products, and even for different plants. In 1964 export products receiving support from industry funds constituted more than one-third of all industrial exports other than diamonds.

In real terms the annual investment in industry[12] went up during 1954—1964 at an average rate of 11.5% per annum, reaching IL 515 million in 1964, compared with IL 172 million in 1954, both figures in terms of 1966 prices. During this period a total of more than IL 3,300 million at 1966 prices were invested in industry. This sum constituted 17.5% of all investments in the economy, and about 26% of all investments other than housing.

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[12] Including construction machinery.

Reparations from Germany were an important source of capital for the purchase of machinery for the various branches of industry (including minerals). From 1954 to 1962 industrial equipment worth $ 68 million was imported within the framework of the Reparations Agreement,[13] constituting 11.5 % of all investments in machinery during that period. During the years immediately following the Agreement, it played an even greater role in the import of equipment, covering 17.5% of all machinery imports during the four-year period 1955 — 58.

Some 13% of all industrial investments during this period — IL 450 million, at 1966 prices — were in mining and quarrying. During the 1950s the annual investment in this field had been between IL 10 to 40 million, but it was much higher in the 1960s. During the three years 1961 to 1964 IL 80 million on the average were invested in mineral extraction every year, especially in the expansion of the Dead Sea Works, in the calcination process at the Oron phosphate plant, and in additional installations at the Negev Ceramic Materials plant.

The stock of capital in industry increased from 1954 to 1964 at an annual average rate of nearly 12%. This is less than the annual increase in output — almost 13% — resulting in a decline of the capital/output ratio. Capital per worker increased on the average by more than 5% per annum.

Greater investment activity in industry is to a large extent due to the Government's policy of encouraging investments. The Government's major instrument for this purpose is the Law for the Encouragement of Capital Investments, which was designed to increase investment in various sectors of the economy, mainly in industry. This law was passed in 1950, and has been amended several times since then, most importantly in 1955 and 1959, to increase the benefits and incentives offered to investors. In order to assist the investor and implement the law, the Investment Centre was set up to centralize all the activities connected with investment projects, and to examine in the light of fixed criteria whether these projects meet the requirements of the law.

The Law for the Encouragement of Capital Investments of 1950 and its 1955 amendments granted to "Approved Enterprises" incentives of which the most important were: reductions in income and property taxes, customs exemptions and other tax reductions; the right to repatriate profits, as well as capital, within specified periods. In 1959 these incentives were broadened: limitations on the amount of profits to be repatriated were eliminated, and depreciation allowances for purposes of tax computation were increased. The law was extended to cover investments not only in physical properties, but also in financial assets, in order to encourage activity on the securities exchange.

The major criteria, according to which Approved Enterprise status and the consequent incentives were accorded, were as follows:

a) The investment's contribution to the balance of trade, through export or the replacement of imports;

b) Its contribution to employment, especially in development areas;

c) Assurance of continuous orderly production of products defined as essential.

In addition to the provisions of the Law for the Encouragement of Capital Investments, all industrial enterprises, including approved ones, were entitled to the following major incentives: low-interest loans — until 1956 without linkage to the dollar or the cost-of-living index; industrial buildings in development areas on low-rental terms; participation in labor training costs in development areas. During most of this period, imported equipment was exempt from customs, or paid a low customs rate, thus lowering equipment costs; in some instances the Government assured investors of a monopolistic position by preventing competitive imports or the establishment of additional plants in the same field.

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[13] See: Bank of Israel: "Reparations and their Effect in the Israeli Economy," p. 122.

In 1963 a new policy was adopted in the implementation of the Law for the Encouragement of Capital Investments, increasing selectivity in approving new enterprises and the expansion of existing ones. Its aim was to give priority to projects that would contribute more to export, and to encourage enterprises in development areas.

Between 1954 and 1964 employment in industry went up by more than 6% a year, on the average, absorbing 100,000 additional workers — one-third of the employees added in the whole economy during the period. Industrial employment thus rose from 22% of the total in 1954 to 26% in 1964. 1964. Output per worker increased during the period by an average of more than 6% a year.

Industrial employment rose more rapidly during the second half of this period, 1959—1964, when it went up by 7.5% a year, compared with 5% per annum during the first five years. This more rapid expansion of employment in 1959—64 was the result of the more rapid rise in industrial output, together with a slower increase in output per worker, than during 1954—59.

Until 1960 the economy had known a surplus of labor and a relatively high unemployment rate, especially in development areas. At that time Government policy was aimed at greater employment, priority was, therefore, accorded to projects in places where unemployment existed and to labor-intensive enterprises — especially those that were intensive in unskilled labor. Among other results, these considerations also led to a considerable expansion of the textile industry. The Government also encouraged absorption of additional workers in existing enterprises, at times without being able to take economic factors alone into consideration.

Between 1961 and 1964 there was a serious shortage of labor, which became more severe from one year to the next. At first there was a shortage of skilled workers in a limited number of trades; in 1963 and 1964 this expanded to additional ones and even to unskilled labor.

Between 1955 and 1964, daily wages of industrial workers rose by about 112%, the equivalent of an annual average of 8.7%. Real wages, taking into consideration changes in the cost-of-living index, rose by 33%, about 3.2% a year. From 1955 until 1960, when labor was in oversupply, nominal wages rose by 7.5% a year, on the average, and, in real terms, by 3.5% a year. From 1960 to 1964, when there was a shortage of workers, nominal wages went up by 10% annually, and real wages by 3%.

3. 1964—1967

A turning point in the development of the economy in general, and of industry in particular, was reached in 1965 and 1966. In 1965 began the economic slowdown, which grew more serious in 1966 and by 1967 caused a contraction of output, investments and employment.

After rapid development of industry during the preceding ten years, the growth of industrial output slowed down considerably in 1965 and 1966, and it declined in absolute terms in 1967. Output increased by 9.5% in 1965 and by 2.5% in 1966, while preliminary estimates for 1967 indicate a decline, in real terms, of 4%: from IL 6,910 to IL 6,615 million.

TABLE 17. Major Indicators of Industrial Development 1964 – 1967 (at 1966 prices)*

	1964	1965	1966	1967++	Annual increase (%) 1965	Annual increase (%) 1966	Annual increase (%) 1967++
Output (IL million)	6,155	6,740	6,910	6,615	9.5	2.5	-4.2
Export ($ million)**	280.3	316.6	375.2	385.4	13.0	18.5	2.7
Diamond exports, net	118.2	131.8	164.7	157.9	11.5	25.0	-4.0
Other industrial exports	162.1	184.8	210.5	227.5	14.0	13.9	8.1
Gross investment (IL million)+	514	488	339	264	-5.0	-30.5	-22.1
Stock of capital+	3,901	4,232	4,475	4,612	8.5	5.7	3.1
Employees ('000)	221.6	224.5	222.0	211.0	1.3	-1.1	-5.0
Output per worker (IL '000)	27.8	30.0	31.1	31.4	7.9	3.7	1.0
Capital per worker (IL '000)	17.6	18.9	20.2	21.9	7.4	6.9	8.4

* Exports in dollars, in terms of current prices.

** Exclusive of sales of old ships and planes, and unrequited exports.

+ Includes construction machinery; stock of capital at beginning of year.

++ Preliminary estimates.

The major reasons for the slowdown in industrial activity were as follows:

a) Construction activity declined: while it had expanded on the average by 12% a year between 1961 and 1964, it expanded by only 6% in 1965, and contracted by 20% in each of the years 1966 and 1967. Reduction of building activity gradually affected the industries that supply construction inputs. At first this influence was noticeable in industries supplying inputs for the early stages of construction, such as mining and quarrying — crushed stones and sand —, non-metallic minerals — cement, cement products, lime and clay —, and basic metals. Later, industries producing for the final stages of construction — such as carpentry, glass, various metal products, electrical components, etc. — were affected.

b) Reduction of investments in the entire economy, and especially in industry, which began in 1965. This mainly affected the metal, machinery and vehicle industries. The rate of their growth slowed down considerably in 1965, and their output dropped, in real terms, in 1966 and 1967.

c) The slowdown in the rise of private consumption, owing to less immigration and a slower rise in per capita consumption. In 1965 per capita consumption went up 4.5% in real terms and in 1966 by only 0.6%, while in 1967 it declined by 3% — as against an annual increase of 6% in earlier years. This slowdown in the expansion of demand primarily affected the demand for durables, and caused declines in the output of appliances, vehicles and furniture, while production of non-durable consumers' goods continued to rise.

Except for individual products, the decline in local demand during the recession years did not lead to a considerable increase in exports. After having risen on the average by 18% a year from 1961 to 1964, exports only increased by 11% annually in 1964 — 1967: they expanded by 13% in 1965, 18.5% in 1966, and only 3% in 1967. The high growth rate in 1966 was due primarily to the rapid expansion of diamond exports, as a result of booming international demand and rising prices in that year; diamond exports are not a function of local demand. Industrial exports other than diamonds rose in 1966, as well as in 1965, by about 14% a year.

In 1967 diamond exports declined by about 4%, owing to a slump in the world markets, to $ 158 million, while industrial exports other than diamonds rose by only 8% to $ 228 million. The considerable slowdown in the expansion of industrial exports other than diamonds in 1967 can only partly be explained as the result of the war, which dislocated marketing, and led to cancellation of orders by importers abroad, and by restriction of Israel's outlet to most East European countries.

Contraction of local demand did not result in greater exports because the existing industries depend upon the local market, in which they sell all or most of their output, and are unable, in the short run, because of high costs or low quality, to develop exports and compete in international markets. Besides, manufacturers who have been selling in the local market, are not organized for export; they lack the necessary knowhow, market research, marketing channels, etc. In recent years, moreover, there has been little development in competitive export industries, so that they have not absorbed workers laid off by industries working for the local market. In the second half of 1967, there have been indications of an increase in the number of investment projects in industry, especially in new exporting industries.

Nevertheless, there were considerable increases in production costs per unit even in these years, and especially in 1965 and 1966, owing to higher wages and increased prices of local inputs. Nominal daily wages per worker rose by 14% in 1965 and by 16% in 1966.[14] Increased export incentives in these years were not very effective in speeding up the growth of exports.

The policy of export encouragement was changed in 1966. Most of the existing incentives in the form of participation in expenses were considerably enlarged, either by increasing the size of the incentive or by broadening the categories of expenses eligible to receive the incentive. In addition, a system of encouragement by the granting of rebates in respect of indirect taxes was introduced, covering all industrial export goods. These are paid out of the Government Budget, at varying percentages of gross exports, products with a higher proportion of added value receiving higher rebates. The rebate rates have been raised during the last two years. After the devaluation of November 1967 the following rates were set: products with added value between 25 and 44% will receive IL 0.10 per dollar gross receipts; added value between 45 and 64% — IL 0.20; added value above 64% — IL 0.35 per dollar received.

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14) Source: Central Bureau of Statistics, Industrial Indices

Investments declined by 5% in 1965, a further 30% in 1966, and an additional 22% in 1967. In 1967 investments in industry, including construction machinery, totalled IL 265 million. Without construction machinery, the figure for 1967 was IL 245 million, compared with IL 310 million in 1966, IL 403 million in 1965 and IL 440 million in 1964. Investments in 1967 were, thus, 45% below the level of 1964.

This severe decline in the level of investments was due to several factors. The expansion of investment already tended to slow down in 1964. The contraction of investments in 1964–65 was probably due to expectations of saturation in the local market, a halt in the improvement of industrial profitability, and a shortage of projects for investment in export. In addition, during 1965–66 investment in mining and quarrying declined, as several large projects were completed. These factors were reinforced by the effects of the economic slowdown, which reduced the tendency to invest in industry, because of the creation of excess productive capacity and fears of a continued slump.

After the considerable drop in investment during 1965–1967, and in order to encourage investors, further amendments to the Law for the Encouragement of Capital Investments were passed in 1967. The most important of these innovations offer further benefits in indirect taxes and cash grants in proportion to the investment in the project, varying with the region in which it is established.

In addition to the additional concessions provided by the law, approved enterprises will be eligible for development loans at 6.5% – 10% interest.[15]

As a result of the decline in industrial activity during the period 1964–1967, industrial employment also decreased. While there was a shortage of workers between 1961 and 1965, the excess demand for labor had already disappeared in the second half of 1965. In 1965 industrial employment rose by only 1.3%, after rising by more than 5% in 1964, 8% in 1963 and 9.5% in 1962. This considerable slowdown in the growth of industrial employment resulted from slower growth in total output, and the rapid rise – 8% – in output per worker. As the recession deepened in 1966, about 3,000 industrial workers were laid off – a reduction of more than 1%, from 225,000 industrial employees in 1965 to 222,000 in 1966. The number of days worked in industry declined even more, because of a shift to shorter working weeks of five days and occasionally even less, creating concealed unemployment in industry. The number of workers dropped even lower in 1967, totalling, according to preliminary estimates, 211,000 – a decline of 5%.

Generally, decline in employment took place in those industries where output was reduced.

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15) For further details of the various benefits available to approved enterprises and others, see: Chapter on Investments.

C. PLAN FOR INDUSTRIAL DEVELOPMENT 1968—1971

1. Introduction and Summary

The plan for industrial development has been drawn up in accordance with the established objectives of the national economy. Because of limitations on growth in other sectors of the economy, the contribution of industry must be greater. This holds for its contribution to the rapid expansion of production, the closing of the balance of payments gap, increasing employment, and the dispersal of the population.

The central objective for future industrial development is the expansion of exports; this demands continuously greater adaptation to world price levels, increased competitiveness and lesser dependence on the local market. The high protection accorded local industry against competitive imports has led to the development of many industries which produce at cost exceeeding the price levels accepted in international commerce. Most industries depend upon the local market, exports accounting for only a small portion of their output.

In addition, there are objective limitations which affect the competitive capability of industry. These are: the lack of natural resources and local raw materials; distance from the export markets, which keeps transport costs high; a small local market, which determines the small size of plants that depend upon it.

When greater productivity in the past improved industry's competitive position in export markets, this was too often countered by considerable increases in expenses. In the local market, industry was able to raise prices after costs went up; in foreign markets the higher costs reduced its competitiveness.

Present industrial exports are characterized by a large degree of concentration, especially where the increase in exports is concerned. During recent years the expansion of exports was mostly concentrated in a few products, like diamonds, minerals, citrus products and refined fuels. Because of various limiting factors, to be detailed below, the expansion of exports during the years to come cannot be based on these items. In addition, several industries are now able to export thanks to high incentive payments; these include textiles, low-price clothing and plywood, and account for 25% of all industrial exports other than diamonds. The future expansion of part of these exports, at present cost levels, is not beneficial to the economy.

The Government will, therefore, act in two ways in order to achieve this plan's objectives. First, the structure of industry is to be changed through the development of new export industries, which will sell abroad large portions of their output, and will be capable of competing in the world market. Secondly, the capacity of existing industry to compete in foreign markets, as well as against imports in the local market, will be enhanced through greater efficiency in production and distribution. Enterprises will be encouraged to expand and amalgamate to introduce new technologies, develop industrial research and improve the quality of their products.

The plan presented here primarily constitutes only a framework, designed to point out the objectives and directions of industrial development, to indicate, in general, the added volume of production and export, and the needs for investment capital and manpower during the next few years, and also to indicate the Government policies necessary to realize this plan.

At the time this plan was being completed, several new possibilities appeared for additional large projects to produce defence items locally, and thus replace imports. These projects have not been included in the detailed estimates presented in this plan. Workshops and factories in East Jerusalem have not been included in the plan either, because no reliable data were available about them. Almost all these plants are small and employ only a few workers each. Industrial output in East Jerusalem is concentrated mostly in garages, metal workshops, simple food products, cigarettes, clothing and footware, furniture and giftware.

A total of 11,000 employed persons are expected to be added in these two fields until 1971. Estimates of employment, output and investments in these fields have not been included in the plan presented here.

Nor does the plan take into consideration the possibility of free trade with the administered areas. Commercial relations with these areas will result in only a slightly larger market for Israeli manufactured products, because of the relatively low standard of living there. It can also be assumed that Israeli industry will not be injured by competition on the part of industry in the occupied areas, since total industrial output there only amounts to 2% of Israeli industry output, and part of the products are of lower quality than those made in Israel.

TABLE 18. Basic Data on Industrial Development, 1966, 1967 and Forecast for 1971* (at 1966 prices)

	1966	1967 Preliminary Estimates	1971 Forecast	1971 Indices 1966=100	1971 Indices 1967=100	Average Annual Growth (%) 1966-1971	Average Annual Growth (%) 1967-1971
Output (IL million)	6,910	6,614	10,400	150.5	157.2	8.5	12.0
Export ($ million)	375.2	385.4	725.0	193.2	188.1	14.1	17.1
Diamonds	164.7	157.9	230.0	139.6	145.7	6.9	9.9
Other products	210.5	227.5	495.0	235.2	217.6	18.7	21.4
Gross investment (IL million)**	310	245	800	258.1	326.5	20.9	34.5
Employment ('000)	222.0	211.0	265.5	119.5	125.7	3.6	5.8
Average output per worker (IL 000)	31.1	31.3	39.2	126.0	125.2	4.7	5.8

* Exclusive of East Jerusalem and several large new projects for defence production.

** Exclusive of construction machinery.

Source: Ministry of Commerce and Industry, and Economic Planning Authority.

Industrial output will reach IL 10,400 million according to this plan by 1971, in terms of 1966 prices, compared to IL 6,900 million in 1966 and IL 6,600 million in 1967. This is an increase of 50% within five years, or an average of 8.5% a year, on the basis of 1966. Taking 1967 as the base, the increase will be 57% in four years, or 12% annually.

There will be an increase in the relative importance of those industries in which added value accounts for a relatively large share of output. Because of this, the industrial product will increase at a somewhat higher rate than gross output, by 9% a year on the basis of 1966 or 12.7% a year on the basis of 1967. Industry's share of the Gross National Product (in terms of market prices) will rise from 24.4% in 1966 to 26.2% in 1971.

The objective for industrial exports in 1971 is $725 million, compared with $375 million in 1966 and $385 million in 1967. This amounts to a 90% increase within four years, or 17% annually. Industrial exports will go up from 78.5% of all goods exports in 1966, and 75% in 1967, to 81% in 1971. In respect of all exports, goods as well as services, the increase will be slight.

Diamond exports will go up by 10% a year, while other industrial exports will go up by more than 21% a year on the average. The relative importance of diamonds, minerals and textiles exports will decline, while the metal industries, machinery, electrical and electronic equipment, transport equipment and chemicals will constitute a larger part of total exports. Direct exports will account for 21% of industrial output in 1971, compared with 16 to 17% in 1966 and 1967 respectively.

These export objectives will not be achieved easily. Great efforts will be necessary with respect to investment, greater productivity, the creation of services for industry, such as the organization of marketing and research, and the training of manpower in the numbers and at the levels of skill necessary.

In order to expand output and exports, and also to assure the continued growth of industry after 1971, it will be necessary to invest in industry about IL 2,500 million between 1968 and 1971. This will constitute about 27% of all investments in the economy during these four years, exclusive of housing. It is estimated that in 1971 the necessary investment in industry will be IL 800 million. Such investments during this period will increase the stock of capital in industry from IL 4,715 million at the beginning of 1968 to IL 6,715 million at the start of 1972. The volume of investments required during the next few years is large in relation to the present scale of investment and initiative. To a great extent, the achievement of this plan's objectives depends upon the private and public initiative which must be found to carry out these necessary investments, especially in the new export industries.

TABLE 19. Industry's Role in the Economy*, 1966, 1967 and Forecast for 1971 (Percentages in terms of 1966 prices)

Industry's share of	1966	1967	1971
Gross National Product **	24.4	23.0	26.2
Goods exports	79.1	74.8	81.0
All exports	45.8	44.6	47.5
Investments (exclusive of housing construction)	18.9	17.6	31.2
Employment	25.4	25.4	26.4

* Exclusive of East Jerusalem and several large new projects for defence production.

** At market prices.

Source: Ministry of Commerce and Industry and Economic Planning Authority.

In 1971 industry will need 265,000 workers, compared to 222,000 in 1966 and 211,000 in 1967. In other words, during the next four years industry will absorb 54,000 additional workers. Per worker output is expected to increase at the average annual rate of almost 6% on the basis of 1967.

2. Directions of Industrial Development

During the next few years, Government policy on industrial development will concentrate mainly on industries likely to enjoy a relative advantage and be competitive in export markets, and capable of selling abroad a large part of their output. Industrial development will concentrate in three main directions:

a) Industries based on local raw materials. In the realm of mineral extraction and processing, large investments are to be made in the development of chemical industries, which will convert the raw minerals, mainly potash and phosphates, into agricultural fertilizers and various industrial chemicals. The large investment projects in this field are: construction of the Arad Chemical Combine, which in the first stage will produce phosphoric acid, with an investment approximating IL 110 million; completion of the Haifa Chemicals plant, for the production of potassium nitrate and phosphoric acid, at an investment of about IL 40 million. Almost all of these plants' output is destined for export. New installations will also be put up at Chemicals and Phosphates' Haifa plant, for the production of ammonia and urea; investment here is estimated at IL 37 million. The mineral extraction plants will also get new investments; most important of these will be the expansion of the Dead Sea Works' potash production, with an additional investment of IL 50 million.

A parent organization — Israel Chemical Ltd. — has recently been set up to unify the enterprises in the fields of mineral extraction, basic chemistry, petrochemicals and refineries — the Dead Sea Works, Chemicals and Phosphates, the Arad Chemical Combine, Haifa Chemicals, the Haifa Refineries and Israel Petrochemical Industries. Amalgamation of these enterprises is aimed at greater coordination and the utilization of economies of scale, primarily in the fields of investment planning, marketing, finance and the purchase of raw materials. After the parent company passes the first stage of its organization, within two to three years, conditions will be created for new investments to make additional products utilizing minerals found in Israel.

Possibilities for further export expansion, based on the processing of agricultural raw materials, are more restricted. The citrus products industry will expand, in accordance with the quantities of surplus fruit made available to industry. In addition, greater quantities of fruit and vegetables will be channelled to industry, and vegetable varieties will be introduced which are suitable for industrial processing and meet the opportunities in export markets.

b) Industries which have the following major characteristics:

1) A high component of skilled labor, knowhow and research. The salary and wage level of skilled and scientific labor in Israel is low compared with the United States and, to a certain extent, with Europe.

respect of unskilled labor Israel does not enjoy such advantage. She has anpower on a relatively high professional and scientific level, which may channelled towards industrial production.

2) Products of a non-standard character, which are turned out in elatively limited quantities or custom-made. Production of such items is t particularly subject to economies of scale, and is therefore suitable r Israel.

3) Industries in which, in view of Israel's distance from import and xport markets, the transportation component is low in respect of raw aterial imports and the export of finished goods.

4) Industries in which high quality and original design are important. rael cannot have any advantage in the manufacture of simple products comparison to many development countries with low wage-levels.

The industries that meet these requirements, are mainly the following: on-standard equipment systems for industry and construction; dies and oulds; cutting tools; irrigation equipment; spare parts; electronic uipment for industry; medical and research electronics; fine chemicals; armaceuticals; pesticides; furs; fashion goods, etc. There is room r the development of industries based on scientific research, near the ientific institutions, such as the Haifa Technion, the Weizmann Institute d the Universities, and utilizing their know-how and services, such as boratories, libraries, etc.

In several of the suitable industries there are already beginnings. These clude the production of irrigation equipment, industrial and construction uipment, cutting tools, fashion wear, pesticides, and several science-tensive enterprises in pharmaceuticals and electronics.

The development of these industries is conditional upon the readiness of trepreneurs to invest in them, and also upon the creation of various sential services, such as the organization of marketing channels and e organization of research and development; these the individual anufacturer is not always capable of carrying out by himself.

During the duration of this plan, efforts will be made to develop these dustries rapidly, and to create the necessary framework of services r them. Investments in these industries during the next four years will ar most of their fruit in output, export and employment only in the ng run — that is, after the end of this plan's duration.

c) Israel's growing defence needs, and the political difficulties which nder the purchase of defence equipment in other countries, will bring out a considerable expansion in local defence production, new fields ing entered and imports replaced. These security requirements will ake necessary the rapid development of military industries, within the fence establishment, and also of civilian industry to produce finished oducts, components and replacement parts for defence needs. The pansion of local production of military items will affect the development the metal, machine, transport equipment, electronics and optical dustries. Production of defence products is based on modern know-how d progressive production technology; it demands high standards of ality and precision. Working for the defence establishment may thus ing about considerable changes in the organization, production chnology and quality level of supporting industries, which will also doubtedly affect production for the civilian market and contribute to the pansion of their exports.

3. Industrial Output

By 1971 industrial output, in real terms, will total according to this plan IL 10,400 million, compared with IL 6,900 million in 1966, both on the basis of 1966 prices. This is an increase of 50%, or an annual average rise of 8.5%. In real terms output declined in 1967 by 4%, to IL 6,600 million. To achieve the planned level for 1971 will thus require a more rapid gain during the four years to come, averaging 12% a year on the basis of 1967.

Industrial output will go up more slowly during the period of this plan than it did during 1960-64, which were boom years for industry. The major reasons for this are the lower projected growth rate of personal consumption, and the slower growth of the entire economy. Still, industrial output will gain more rapidly than the national product, and that of most other sectors of the economy.

The relative importance of industries in which the added value constitutes a larger share of total output will go up and the product of industry will therefore rise at the rate of 9% a year, on the basis of 1966, and 12.7% a year, on the basis of 1967.

The increase in the output of the major branches of industry has been estimated according to the growth of the various intended uses, for export and for the local market, in respect of each industry.

The basis for the projection of industrial exports is explained in the section on industrial exports. The output of products destined for private consumption has been estimated on the basis of the expected growth of population and increase in per capita consumption until 1971; elasticity of expenditure[16] has been taken into consideration in order to estimate demand for various consumption goods. The estimate of public consumption has been based on information obtained from the appropriate Government departments. Production of investment goods has been estimated on the basis of the volume of investments necessary for the various branches of the economy, according to the different types of required equipment, and assumptions on the possibilities of replacing imports. The output of intermediate products for industry and other sectors of the economy has been estimated in accordance with the expected development of the end-use industries, and on the basis of Bank of Israel data on the relative weight of such intermediate products in the output of various industries, brought up to date by later information in the possession of the Ministry of Commerce and Industry.

Greater industrial output will be accompanied by changes in its end uses. The part of exports in total production will rise, while the portion destined for the local market will decline. Of the output to be added between 1966 and 1971, 30% will be exported directly, and 70% will go to the local market. This will cause the share of exports in total output to rise from 16% in 1966 to 21% in 1971.

The composition of output destined for the local market will also change. Production of goods for personal consumption will expand between 1966 and 1971 by 6% a year, and only 20.5% of the total additional output will go to private consumption. The relative share of private consumption will decline from 30.7% of industrial output in 1966 to 27.3% in 1971. This decline will result from the Government's policy for a moderate rise in private per capita consumption of about 3% a year, on the basis of 1966, and 4% on the basis of 1967; this is intended to divert resources towards investment and expansion of exports.

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[16] Elasticity of expenditure has been estimated by the Bank of Israel's Research Department.

TABLE 20. Output, and Additional Output, by uses, 1966-1967 (at 1966 prices)

	IL million		Percentages		Additional Output 1966 — 1971		Average Annual Growth rate 1966-71, percentages
	1966	1971	1966	1971	IL million	%	
Total output	6,910	10,400	100.0	100.0	3,490	100.0	8.5
Export	1,126	2,175	16.3	20.9	1,049	30.0	14.1
Local market	5,784	8,225	83.7	79.1	2,441	70.0	7.3
Private consumption	2,120	2,835	30.7	27.3	715	20.5	6.0
Public consumption*	200	490	2.9	4.7	290	8.3	19.6
Investment goods	330	565	4.8	5.4	235	6.8	11.3
Intermediate goods	3,134	4,335	45.3	41.7	1,201	34.4	6.7

* Exclusive of several large projects to replace military imports by local production.

Source: Ministry of Commerce and Industry and Economic Planning Authority.

Public consumption of industrial products in 1971 will be 145% above that of 1966. Most of the demand for industrial products on the part of the public sector originates with the defence establishment. Much of the increase in public consumption, as compared with 1966, already took place in 1967 as a result of the war and the military needs resulting from it. In addition, there are plans to replace the import of various defence items with local production. As a result of the defence establishment's requirements, the share of public consumption in total industrial output will reach approximately 4.7% in 1971,[17] compared with 3% in 1966.

In 1966 the production of investment goods constituted only 4.8% of total industrial output. Between 1966 and 1971 production of investment goods is expected to rise at the considerable rate of 11.3% a year, on the average. Taking 1967 as the base, a higher growth rate will be required in order to achieve the level planned for 1971, since output of such products was lower in 1967 than in 1966. The increase of the production of investment goods will constitute nearly 7% of the industrial output added during 1966-71, raising the share of investment goods to 5.5% of total output by 1971. The expected high rate of increase in the production of investment goods will be the result of the high level of investment, which will be necessary throughout the economy, and especially in industry, in order to reach the economy's objectives. It will also result from the utilization of opportunities to replace imports of machinery and equipment, which will be discussed below.

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[17] This does not include additional large projects for the replacement of imports of products needed by the defence establishment.

Between 1966 and 1971, output of intermediate products will increase by about 40%—6.7% a year on the average. This will be lower than the overall industrial growth rate. Intermediate products will make up 34.5% of the total addition to production, amounting in 1971 to 42% of total industrial output, compared with 45.5% in 1966. The main reason is the slower growth of demand by the construction industry and agriculture for intermediate products from industry — by 20% and 28%, respectively. In 1966 some 30% of all intermediate products turned out by industry were intended for construction and agriculture.

Production in most branches of industry will expand. Output will not expand in several sub-branches which produce at costs considerably higher than import prices, as a result of the Government's policy of exposing local production increasingly to competition from imports. Larger local demand for these products will be satisfied by imports.

The largest gains, compared with 1966 output, will be registered by: electrical and electronic equipment — 15.5% a year on the average; machinery — 13.5%; transport equipment — 13%; chemicals — 11.5%; rubber and plastics — 11.5%.

The major cause for the gains in the output of these industries is the considerable expansion of exports. In machinery, electrical and electronic equipment and transport equipment, this will also be the result of greater production of investment goods, replacing imports. The high growth rate of the rubber and plastics industry is to be explained by the considerable increase of local demand for its intermediate products such as tires and plastic items. The expansion of the plastics industry will also be the result of a switch to the use of plastics, rather than wood and metal products, especially in construction and in investment goods.

The following industries will show a relatively slow growth of output:

a) Industries, a considerable portion of whose output consists of consumers' goods with relatively low income elasticity, such as food, leather and footwear, printing and publishing.

b) Export industries, which can expand their exports during this period only to a limited extent, such as diamonds and mining and quarrying. The growth rate of the wood and wood products industry will also be low, partly as a result of the limited expansion of plywood exports.

c) Industries, a large part of whose output consists of intermediate products for the construction industry, which will only expand moderately. These include non-metallic minerals, part of mining and quarrying, wood and wood products, metal products and basic metals.

In 1967 there was a decline, in absolute terms, in the output of most of these industries, including leather and footwear, wood and wood products, mining and quarrying, diamonds, non-metallic minerals, basic metals and

metal products. In order to achieve the level of output forecast for 1971, the growth rate during the next four years will actually have to be higher than appears in the comparison with 1966.

TABLE 21. Industrial Output, by Branches of Industry, 1966, 1967 and Target for 1971
(in terms of 1966 prices)

Branch	IL millions			Percentages			Average Annual Growth Rate (%)	
	1966	1967	1971	1966	1967	1971	1966-71	1967-71
Total	6,910	6,614	10,400	100.0	100.0	100.0	8.5	12.0
Mining and quarrying	176	163	237	2.5	2.5	2.3	6.1	9.8
Food	1,536	1,620	2,000	22.2	24.3	19.2	5.3	5.4
Textiles	765	714	1,125	11.1	10.8	10.8	8.0	12.1
Clothing	223	225	372	3.2	3.4	3.6	10.8	13.4
Wood and wood products	413	368	575	6.0	5.6	5.5	6.8	11.8
Paper, cardboard and their products	139	151	206	2.0	2.3	2.0	8.2	8.1
Printing and publishing	204	229	280	3.0	3.5	2.7	6.5	5.1
Leather and leather products	118	103	145	1.7	1.6	1.4	4.2	8.9
Rubber and plastics	210	214	364	3.0	3.2	3.5	11.6	14.2
Chemicals and petroleum refining	594	614	1,025	8.6	9.3	9.9	11.5	13.7
Non-metallic minerals	355	249	450	5.1	3.8	4.3	4.9	15.9
Diamonds	494	474	690	7.2	7.2	6.6	6.9	9.8
Basic metals	220	183	320	3.2	2.8	3.1	7.8	15.0
Metal products	355	293	510	5.1	4.4	4.9	7.5	14.9
Machines	392	354	738	5.7	5.4	7.1	13.5	20.2
Electrical and electronic equipment	234	192	480	3.4	2.9	4.6	15.4	25.7
Transport equipment	415	396	765	6.0	6.0	7.4	13.0	17.9
Miscellaneous manufactures	67	72	118	1.0	1.1	1.1	12.0	13.1

Source: Ministry of Commerce and Industry and Economic Planning Authority.

Different rates of growth of various industries will cause changes in the composition of industry as a whole. The outstanding changes will be: the share of the metal, machinery, electrical equipment and transport equipment industries will rise from 23.5% in 1966 to 27% in 1971; the chemical industry will advance from 8.5% to 10%, and the food industry will decline from 22% in 1966 to 19% in 1971.

4. Industrial Exports[18]

a. Volume and Composition of Exports

The target for industrial exports in 1971 totals $725 million, compared with $375 million in 1966 and $385 million in 1967. This forecast implies

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[18] The data on industrial exports in 1966 and 1967, and the forecast for 1971, do not include sales of old ships and planes not produced in Israel, or unilateral exports, such as personal belongings, parcels, etc. Returned diamonds are also excluded.

an average annual growth of 14% compared with 1966 exports, and 17% compared with 1967. During the coming four years exports are, thus, planned to go up by $340 million.

If this objective is achieved, industrial exports will constitute 81% of goods exports in 1971, and 47.5% of all exports, compared with 79% and 46%, respectively, in 1966.

The expected rate of expansion of all industrial exports during the next four years is similar to that of 1962–1966. Industrial exports other than diamonds will, however, expand, according to the plan, at a more rapid rate, reaching an annual average of 21.5% during 1967–71, compared with 14.5% during 1962–66.

The target for industrial exports in 1971 was prepared on the basis of the following assumptions:

1) That the resources and factors of production necessary for export, including skilled manpower, initiative and investment capital, will be available;

2) That the services necessary for the development of export industries, including marketing organizations and applied research facilities, will be provided;

3) That costs of production per unit of output will not go up – in certain industries it has been assumed that unit costs will decline, as the result of considerably higher productivity;

4) That the present rates of export incentives per dollar of added value will be maintained;

5) That the average terms of trade for industrial exports, in respect of customs rates or import quotas in the countries of destination will not deteriorate; possible effects of affiliation with the European Economic Community have not been taken into consideration;

6) That in most instances prices in the export markets will not change; wherever information on expected changes in international prices has been available, this has been taken into account.

In previous years the expansion of industrial exports was concentrated in a small number of fields: diamonds, minerals – potash, copper – cement, phosphates, citrus products, refined fuels and cotton and synthetic yarns. Between 1963 and 1966 these items constituted some 80% of the addition to industrial exports. In the years to come the expansion of exports will not be able to depend on these products, since their export expansion potential in the future is limited. Diamond exports will expand at a slower rate than in the past, mainly because of market limitations, since Israel already controls some 80% of the market in the varieties in which she specializes. The maximum growth to be expected from diamond exports will depend on the expansion of world demand for this type of diamond and success in penetrating the market for smaller diamonds.

The expansion of mineral exports during the next few years will be limited by productive capacity. In addition, world market prices of the minerals Israel exports are expected to decline, owing to rising supply, and potash and phosphate exports may also face marketing problems. The extent of refined fuel exports will also be determined by the capacity of the refineries. The expansion of citrus product exports is conditional upon the amounts of fruit available for industry. Exports of cotton and synthetic yarns will be restricted because of the low profitability of these exports to the economy, and also by marketing problems; excess productive capacity will be directed toward the manufacture of finished products.

The expected additional exports of these items only constitute one-third of the projected expansion of industrial exports between 1968 and 1971. Two-thirds will come from other branches of industry — existing ones, which at present export little, and, mainly, new ones, which are to be developed during the coming years. Thus the exports of the metal, machinery, electrical and electronic equipment, transport equipment, chemicals, printing, garment and leather products industries will expand. The exports of the minerals, diamond, textile, rubber and plastics and basic metal industries will expand at a relatively slow rate.

TABLE 22. Industrial Exports, 1966, 1967 and Forecast for 1971

Branch	$ Million			Average Annual Growth Rate ($)	
	1966	1967	1971	1966-1971	1967-1971
Total	375.2	385.4	725.0	14.1	17.1
Mining and quarrying	29.4	29.2	44.0	8.4	10.8
Food	34.9	36.9	75.0	16.5	19.4
Textiles	37.0	40.7	52.0	7.0	6.3
Clothing	7.8	8.6	34.0	34.3	41.0
Wood and wood products	7.5	8.7	18.0	19.1	19.9
Paper, cardboard and their products	1.8	2.1	5.0	22.7	24.3
Printing and publishing	2.9	3.4	10.0	28.0	30.9
Leather and leather products	1.8	2.5	10.0	40.9	41.5
Rubber and plastics	12.2	12.5	22.0	12.5	15.2
Chemicals and petroleum refining	30.4	35.6	93.0	25.0	27.2
Non-metallic minerals	4.9	4.8	10.0	15.3	20.1
Diamonds	164.7	157.9	230.0	6.9	9.9
Basic metals	8.4	6.5	10.0	3.5	11.4
Metal products	5.1	5.4	15.0	24.1	29.1
Machines	13.9	12.5	40.0	23.5	33.8
Electrical and electronic equipment	1.5	2.7	14.0	56.3	50.9
Transport equipment	3.9	4.0	25.0	45.0	58.1
Miscellaneous manufactures	7.1	11.4	18.0	20.4	12.1

Source: Ministry of Commerce and Industry.

To the extent that this export expansion is achieved, it will bring about changes in the composition of exports. The major changes will be: diamonds will decline from 44% of all exports in 1966 and 41% in 1967 to about 32% in 1971; minerals from 7.5—8% during 1966—67 to 6% in 1971; textiles from about 10—10.5% during 1966—67 to about 7% in 1971. On the other hand, in parallel with changes in their relative share of output, the following industries will also increase their share of exports: metals and machinery from 8—9% in 1966—67 to more than 14% in 1971, and chemicals from 9% in 1967 to nearly 13% in 1971.

TABLE 23. Industrial Exports and Additional Industrial Exports, by Branches of Industry, 1966 – 1971 (%)

Branch	1966	1967	1971	Additional Exports 1967 – 1971
Total	100.0	100.0	100.0	100.0
Mining and quarrying	7.8	7.6	6.1	4.4
Food	9.3	9.6	10.3	11.2
Textiles	9.9	10.6	7.2	3.3
Clothing	2.3	2.5	4.7	7.2
Wood and wood products	2.0	2.3	2.5	2.7
Paper, cardboard and their products	0.5	0.5	0.7	0.9
Printing and publishing	0.8	0.9	1.4	2.0
Leather and leather products	0.3	0.4	1.4	2.5
Rubber and plastics	3.2	3.2	3.0	2.8
Chemicals and petroleum refining	8.1	9.2	12.8	16.9
Non-metallic minerals	1.3	1.2	1.4	1.5
Diamonds	43.9	41.0	31.7	21.2
Basic metals	2.2	1.7	1.4	1.0
Metal products	1.4	1.4	2.1	2.8
Machines	3.7	3.2	5.5	8.1
Electrical and electronic equipment	0.4	0.7	1.9	3.3
Transport equipment	1.0	1.0	3.4	6.2
Miscellaneous manufactures	1.9	3.0	2.5	2.0

Source: Ministry of Commerce and Industry.

The proportion of added value in exports is expected to rise, owing to the relative decline of industries with low added value, such as diamonds, textiles, plywood and refined fuel, and the relative gains in industries with relatively high added value, such as metals and machinery, printing and publishing, pharmaceuticals, optics etc. Similar developments will also take place within the major industries.

Great efforts will be necessary in order to achieve the industrial export objectives for 1971. In particular, the development of new export industries depends upon the availability of entrepreneurs and investors prepared to invest in them. The character of these industries calls for entrepreneurs with a high level of know-how and specific skills.

b) Major Export Industries

During 1966, Israeli diamond exports were encouraged by a booming world market for diamonds, but they suffered from a recession in 1967. In 1967 diamond exports declined to $ 158 million, compared with $ 165 million the year before. According to the forecast, diamond exports will go up by an average of only 10% a year, because of limitations mentioned above, to reach $ 230 million in 1971. This export prognosis assumes that the composition of diamond exports will change during the next few years, increasing the share of smaller diamonds, and thus also increasing export possibilities. In addition. the added value is higher on smaller stones than on "melees." This variegation in production, however, will also run up against difficulties, owing to competition from Belgium and countries with low-cost labor, such as India, who specializes in small stones.

In 1971 the metals and machinery industries[19] will export, according to the plan, $ 104 million, compared with $ 31 million in 1967. Thus they will contribute 21 % of the addition to industrial exports as a whole. In the metals and machinery industries it will be necessary to reach agreements with foreign companies to obtain additional know-how, improve production methods, raise quality, and acquire good will or marketing channels. In many of the sub-branches it will also be necessary to make structural changes in production and distribution through the amalgamation of plants and the establishment of export marketing organizations. These organizations will handle distribution and provide customers abroad with instructions for the use of equipment and other services. Exports of the metals and machinery industry will also increase through the execution of sub-contracting work for customers abroad. Exports of the basic metals industry will increase at a relatively slow rate, while those of the other metal industries will increase rapidly.

Exports of metal products will go up from about $ 5.5 million in 1967 to $ 15 million in 1971, an average annual growth of 29%. This forecast is based mostly upon greater exports of irrigation equipment, cutting tools, molds and dyes, in addition to the export of sub-contracted work.

The machinery industry will increase its exports from $ 12.5 million in 1967 to $ 40 million in 1971. This will be primarily due to rapidly growing exports of industrial machines, especially for the food and chemical industries, construction machinery and agricultural machinery, and to a lesser extent to the export of military products. This prognosis is based on the assumption that Israel will be able to secure orders for the planning and erection of industrial plants in foreign countries, which will make it possible to export the machines necessary for these plants.

Exports of electrical and electronic equipment will rise from $ 2.7 million in 1967 to $ 14 million in 1971. During the next few years this industry will undergo rapid development through the establishment of new enterprises and the expansion of existing ones. New products will be introduced, with a large part of output destined for export. Special emphasis will be laid on the development of electronic equipment for research and laboratories, electronic control and measuring instruments for industry, medical electronics, and electrical and telecommunications equipment.

Exports by the transport equipment industry are forecast to reach $ 25 million in 1971 compared with $ 4 million in 1967. This rapid increase is based mostly on the export of civilian light aircraft by Israel Aviation Industries and also in the export of airplane spare parts and components. The export of vehicles and automotive spare parts will also go up.

Exports by the chemicals industry will increase by an average annual rate of 27 %, on the basis of 1967, and will reach $ 93 million in 1971, compared with $ 35.6 million in 1967. They will account for about 17 % of the additional industrial exports during the next four years. Most of the additional exports by the chemical industry will be derived from rapid development in two directions: first of all, local raw materials will be utilized for the manufacture of finished products; new enterprises being established to this purpose are the Arad Chemical Combine and Haifa Chemicals, which will utilize phosphate and potash deposits for the production of fertilizers and other industrial chemicals. Secondly, exports will increase in fields intensive in skilled labor, know-how and research, such as pharmaceutics, pesticides, fine chemicals and cosmetics. To achieve a considerable expansion of export in these fields it will be necessary to make greater investments in research and development.

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[19] Including these major branches of industry: basic metals, metal products, machinery, electrical and electronic equipment, and transport equipment.

According to the forecast, exports of textile products and clothing will reach $ 86 million in 1971, compared with $ 50 million in 1967, accounting for 10% of the overall increase in industrial exports. In these industries the emphasis will be placed on the export of finished goods, which have a greater percentage of added value, and are economically more worthwhile. A change in the composition of exports is forseen, with exports of finished goods, such as garments and knitwear and, especially, high quality and fashion goods, gaining rapidly, while exports of cotton yarn will contract and exports of wool yarn, synthetic yarns and fibers and fabrics will increase at a slower rate. In order to achieve the export objectives set for the textile and garment industry, it will be necessary to make production more efficient, and to raise standards of quality and design. Effective liberalization of imports can help in this direction, but at least during the earlier period of this plan export incentives will still be needed in this field, at rates higher than in other industries.

Food product exports will be doubled during the next four years, equalling an annual growth rate of 19.5%. In 1971 these will total $ 75 million, compared with $ 37 million in 1967, and the industry will contribute some 11% of total additional industrial exports. Most of this industry's expansion will concentrate on citrus products, other fruit and vegetable preserves, and edible oils. There will also be increases in the export of other food products, especially those aimed at higher-income classes, such as wine and other alcoholic beverages, chocolate, sweets and instant coffee. Export of citrus products will depend largely on the quantities of fruit available to industry for processing. The export prognosis assumes a relative increase in the export of products which are not standard, especially intermediate products, such as concentrates, pulps and bases, intended for producers abroad; the profitability of such products is greater than that of items intended for the final consumer, such as juice, slices, syrup, etc. During the next few years citrus product exports may meet stiff competition in foreign markets, owing to the expected rise of productive capacity in competing countries and marketing problems in the Common Market, caused by higher external customs on citrus products.

Export of other fruit and vegetable preserves will expand considerably in the near future, in accordance with the Ministry of Agriculture's plans for the cultivation of special varieties of vegetables to be processed by industry for export. This will increase exports of tomato preserves (puree, juice and pealed tomatoes), pickled cucumbers, and dried and frozen vegetables. Fruit surpluses will increase during the next few years, making it possible to divert larger quantities, especially of melons and apricots, to industry for export.

c. Export Policy

Organization of Export Marketing

Because most Israel enterprises are small it is difficult for them to create independent and efficient distribution channels and assume the heavy financial burden of export marketing, including the maintenance of special export departments, market research, maintenance of representatives, publicity, the creating of goodwill, and services to customers abroad, such as technical advice, supply of spare parts, repairs, etc.

In many branches of industry a considerable expansion of exports will depend on the establishment of marketing organizations and export companies adapted to the nature of the industry and its specific problems.

The Government encourages the creation of marketing organizations, which will include manufacturers of similar or complementary products, and also of export companies to export a large variety of goods to specific areas.

In general the marketing organizations will be more effective, as they assume more of the responsibilities which the small enterprises cannot undertake. The establishment of marketing organizations on a regional or industry basis may not only result in economies of scale in distribution; it may also bring about greater efficiency in production through coordination of production, specialization by plants, standardization of products, centralized raw material purchases, quality control by the organization, joint research and development, engagement of experts from abroad and the sending of experts from the industry for training in other countries.

The Government supports the establishment of export companies and organizations through the allocation of special grants and the provision of technical and administrative services. It also assists in the operation of industry centers within the framework of the Export Institute, such as the Fashion, Footwear, Book and Printing, and Giftware Centers, etc. In addition, several export companies have been set up at Government initiative, such as Elda, for exports to Africa, Agra, for the export of farm machinery, and, recently, a number of additional export companies and organizations. Atid Inc. will concentrate on increasing sales of Israeli products in the United States. Most of its efforts will be aimed at giving advice to Israel producers and creating contact between them and U.S. businessmen. It will also conduct studies and experiments to establish which Israeli products have a good chance of acceptance in the United States, and in which areas. The company's directors have set up a number of industry committees, through which the efforts to increase sales of Israeli merchandise in the United States will be carried out. The Government covers the expenses of the company, which will shortly set up an Israel office.

Another new company is Eneris, which is to contract for the erection of industrial enterprises abroad, in order to encourage the export of Israel-made industrial machinery and equipment systems, and of Israeli engineering and professional know-how. The company works through Israeli firms which can plan and set up industries, and supply them with equipment. The company also coordinates the export of industrial machinery and carries out market research.

The Subcontracting Authority was set up by the Government in order to further the export of various components and semifinished goods through the creation of contacts between foreign factories and Israeli producers. It is active in the metal, forged products, electronics and industrial rubber products and plastics industries.

Encouragement of Exports

Industrial exports will be encouraged in a number of ways.

Indirect taxes will be refunded at a rate per dollar of gross exports depending on the added value. Items with added value of 25% to 44% will receive IL 0.10 per dollar; items with added value of 45 % to 64 % — IL 0.20 per dollar; items with added value of 65% and above — IL 0. 35 per dollar.

TABLE 24. Rates of Indirect Tax Refunds per Dollar of Exports, and per Dollar of Added Value

Percentage of added value	Tax refund (IL) per dollar exported	Tax refund per dollar of added value (IL)
25 — 44	0.10	0.23 — 0.40
45 — 64	0.20	0.31 — 0.44
65 — 100	0.35	0.35 — 0.54

Exporters will enjoy other fiscal benefits in addition to indirect tax refunds. These will include refunds on property taxes paid on equipment and stock on hand, and also exemption from travel tax on trips abroad. Another method used is the granting of working-capital credits at 6% interest: in foreign currency to finance raw material imports, and in Israel pounds to finance local production costs. Credit is also available to exporters to cover their foreign sales on credit. Exporters are also eligible for Government participation in certain transportation costs and port charges, such as trans-shipment costs, the cost of hauling export goods overland to Eilat, the refund of dock charges on imports to be used for the production of exports, refund of part of export risk insurance premiums, and participation in the costs of marketing, market research, promotion, the establishment of sales offices, and grants to export companies.

The Government also encourages exports by providing various services to exporters. The most important of these are offered through the Export Institute and the Company for Fairs and Exhibitions, most of whose funds come from the Government. The Export Institute was set up by the Government together with the Manufacturers' Association and the exporters; its function is to support the efforts of exporters through the provision of information and guidance on exports, contact with customers abroad and commercial attaches, etc. The Institute works mostly on an industry basis: it has industry centres, each responsible for the promotion of exports in its industry. At present there are Centers for Fashions, Books and Printing, Footwear, Giftware, Building Components, Technical Products, and Chemical Products. The Company for Fairs and Exhibitions, a Government organization, organizes participation in fairs and exhibitions throughout the world on behalf of Israeli exporters, through Israel pavilions at international fairs and special Israel exhibitions and Israel Weeks. The company also invites important customers to Israel and organizes showings for them.

5. Replacement of Imports

The expansion of exports is the most important method of closing the gap in Israel's balance of payments, but to the extent that replacement of imports is technically feasible and economically worthwhile, it is also an effective method to the same end.

Import of industrial products accounts for more than 80% of all visible imports to Israel.[20] It consists mostly of production inputs — raw materials and semifinished products, which in 1965 accounted for 65% of all industrial imports and 25% of investment goods. The import of manufactured consumers' goods is relatively small — only about 10%.

The possibility of replacing imported production inputs and consumers' goods is limited. Imported consumers' goods include food products, other items for current consumption, and durables, such as vehicles, household equipment, etc. As a result of the high protection accorded for years to local production of consumers' goods through a high effective rate of exchange, almost every possibility in this direction has been exploited within the present extent of the local market. What is more, during the near future, imports of consumers' goods are expected to go up, mainly because of rising incomes, which will especially increase imports of durables, and the exposure of local production to foreign competition, which will be effective during the next few years.

Most of the raw materials imported at present depend for their production on natural resources not to be found in Israel, such as fuel, raw diamonds and various metals, and on certain farm products which cannot be produced economically here, such as coffee, tea, rubber, lumber, etc., or on products the demand for which cannot be entirely met by local output, such as wheat, oil grains and meat. The import of processed intermediate products is relatively small; while it is possible to make these products here, this is not always economical. In these fields there still are some opportunities, however limited, to replace imports, mainly owing to expanding local demand, which can make production of various materials economical. There also are possibilities of reducing imports through the replacement of imported natural raw materials with locally made synthetic ones, such as, for instance, the substitution of plastics for wood and metal. On the other hand, "exposure" to competition will during the next few years work to enlarge the import of intermediate products.

The plan for industry assumes that there will be some further replacement of imports of consumer goods and production inputs. However, the benefits to the trade balance will be offset by increases in imports owing to lower protection.

It should be emphasized that different industries will be affected differently by "exposure" and the replacement of imports. In some industries imports will be replaced, while in others "exposure" will cause imports to go up. The replacement of imports of production inputs is most likely in chemicals, rubber and plastics, metal, and the manufacture of various spare parts. On the other hand, "exposure" may injure, mainly, paper and cardboard, wood and wood products, food processing, textile and clothing, leather, and metal industries supplying durable goods.

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[20] Not including imports of raw diamonds re-despatched abroad.

In contrast to consumers' goods and production inputs, there are possibilities of replacing the import of machinery and equipment. However, large-scale local production of most investment goods, which until now have been imported from abroad, depends to a large extent on the existence of a market considerably larger than the local one. The main reason for this is the limited scope of local demand for the different types of machines, and the year-to-year fluctuations of this demand. The replacement of equipment imports will, therefore, become possible as exports expand. The rapid development of metal industries manufacturing equipment for export, such as the metal products, machine, electrical equipment and transport equipment industries, will at the same time make it possible to replace imports. In this plan it has been assumed that the import of machinery and other types of equipment will be replaced, by 1971, to the amount of $15 million. In addition, it is to be expected that there will be replacement of military equipment imports— to an extent dependent on the political difficulties involved in the purchase of such equipment from foreign sources.

The above statements refer to the replacement of gross imports. Local production of such items involves imported components, so that the net effect on the balance of payment will be smaller than the extent of gross import replacement.

Possibilities of replacing the import of manufactured goods, other than defense items, are relatively limited. In order to exploit the relatively limited potential of import replacement, it is still necessary to examine industrial imports item by item, in order to identify those products which, from the technical and economic points of view, can be replaced. Those products for which replacement is found to be worthwhile will enjoy appropriate protection for a certain period, in order to encourage the local production of these items.

6. Required Investments in Fixed Assets

a) Extent and Composition of Investments

The achievement of this plan's objectives depends first and foremost on the availability of entrepreneurs who will be prepared to invest the necessary capital and know-how in industry, especially in those fields which will contribute most to the achievement of the objectives. Should Israel not succeed in finding investors for the desired lines of development, it will become impossible to realise the plan. It should be emphasized that the estimates of investments shown below constitute not an independent forecast of the investment activity expected during this period, but an indication of the volume of investments that will be necessary in order to achieve the target level of output and exports.

Gross investments of IL 2,500 million, in terms of 1966 prices, will be
essary in industry and mining and quarrying during the next four years.[21]
e IL 500 million will go to the replacement of discards. During the
s of the plan, investments in industry will amount to 21% of all invest-
ts including housing, and about 27% of investment in the economy ex-
ive of housing.

nvestment estimates for the various industries have been prepared on
basis of capital/output ratios computed by the Bank of Israel and re-
d in several instances by the Ministry of Commerce and Industry, as
as on estimates of the investments necessary to replace discards.[22]
mining and quarrying, investment estimates are based mainly on
cific investment projects, which will be carried out in the mineral
action enterprises (other than stone quarries).

n establishing the need for investments during the years to come, it
taken into consideration that most branches of industry had consider-
e excess capacity in 1967. For this reason, part of the expansion of
out can be achieved with the present capital stock and without additional
estments. Furthermore, the rise in importance of skilled-labor-
ensive industries will bring about a lower ratio between the additional
ital necessary and the additional output. For these reasons, capital
ck in industry will expand at a lower rate than the rate of growth of out-
. Fixed capital stock in industry will increase from about IL 4,715
lion at the beginning of 1968 to IL 6,715 million at the end of 1971.
s equals an annual average growth rate of 9.3%, while output will go up
he rate of 12% a year, on the basis of 1967 output.

The breakdown of gross investment in industry between buildings and
thworks on the one hand and machinery and equipment on the other, will
differ from what it has been in the past. About two-thirds of gross
estment, some IL 1,675 million, will be for machines and equipment;
estment in buildings and earthworks will be one-third of the total: about
825 million.

In order to illustrate the volume of investments each year, a year-by-
ar investment estimate is presented below. Taking into consideration
t time passes until investments can bear fruit, and that the volume of
vestments declined considerably during 1966 and 1967, a rapid increase
the volume of investments will be necessary in the near future if the out-
t forecast for 1971 is to be achieved. In allocating the investments
cessary throughout the period by years, the maximum amount of invest-
ent to be expected on the basis of available data in 1968 has been taken
o consideration. It has also been assumed that in 1971 some IL 800
llion will have to be invested in order to assure continued growth of
dustrial output after 1971.

During the first two years of this program, investments in mineral
traction enterprises, and in chemical plants for the processing of
inerals, will total some IL 250 million — 25% of all investments needed in
dustry during these years. On the other hand, in 1970–1971 their share
ll be small, constituting only 5% of all investments, owing to the comple-
on of large projects in this field.

Exclusive of additional projects to manufacture products for the defence establishment, and
investments in crafts and manufactures in East Jerusalen.

For an explanation of methods of computing discards, see chapter on Investments.

TABLE 25. Gross Investment in Industry, 1966—1971*
(in terms of 1966 prices)

Year	IL million	Annual growth rate (percentages)
1966	310	
1967	245	−21.0
1968-1971	2,500	
1968	400	63.3
1969	600	50.0
1970	700	16.7
1971	800	14.3

* Actual investment in 1966 and 1967; investment needed during 1968 — 1971.

Source: Ministry of Commerce and Industry and Economic Planning Authority.

TABLE 26. Estimated of breakdown of gross investment, by branches, 1968—1971 (percentages)

Branch	Percentages
Total	100.0
Mining and quarrying	4.0
Food	9.9
Textiles	10.9
Clothing	2.8
Wood and wood products	4.4
Paper, cardboard and their products	1.4
Printing and publishing	1.8
Leather and leather products	1.0
Rubber and plastics	6.8
Chemicals and petroleum refining	21.5
Non-metallic minerals	4.7
Diamonds	1.0
Basic metals	2.6
Metal products	4.4
Machines	6.8
Electrical and electronic equipment	6.4
Transport equipment	8.5
Miscellaneous manufactures	1.1

b) Policy for Encouragement of Investments

The Government's policy to encourage investment activity is carried out by means of incentives, granted in accordance with the Law for the Encouragement of Capital Investments, and also by means of loans, for which all investors are eligible, even if their projects do not have the status of "approved enterprise." Investments in development areas enjoy preference, as expressed by greater benefits. The main investment incentives are cash grants in relation to investment in fixed assets, and convenient-term loans in varying proportions of the investment, according to the area where the enterprise is being set up. Grants and loans may together total as much as 80% of the investment. Loans carry low interest rates, varying from 6.5% to 10%, in accordance with the area.[23]

In addition, investors in an "approved enterprise" are entitled, in accordance with the above Law, to a five-year exemption from income tax, absorption loan and compulsory saving, and are liable only for the payment of 28% corporation tax. In addition, they have the right to accelerated depreciation allowances on their fixed assets and exemption from various indirect taxes.

In addition to the examination of the economic justification of the project, the following criteria must be met in order to qualify for "approved enterprise" status: the plant is to be set up in a development area; alternatively, it is to be set up in the central part of the country and undertakes to export at least half of its output; an existing enterprise must expand by at least 50% and must undertake to export at least 50% of the additional output.

In exceptional instances, the Investment Center may grant "approved enterprise" status when economic or other reasons make it impossible to set up such an enterprise in an development area, or to export its output. This is conditional upon the enterprise producing replacements of import at reasonable international prices.

The Industrial Development Bank also grants loans to investors in projects which have not been approved under the terms of the Law for the Encouragement of Capital Investments. The following investment incentives are available to all industrial enterprises, whether approved by the Investment Center or not: convenient rental terms on industrial buildings, Government participation in labor training expenses, Government participation in the cost of transferring plants from the central part of Israel to development areas.

7. Efficiency and Productivity

Because industry must improve its competitive capacity, it is essential to work for greater productivity, lower costs and better product quality. One of the important factors which can motivate manufacturers to raise productivity and improve quality is the effective exposure of local production to competitive imports. In this field, Government policy during the years to come will continue to switch from administrative protection to protective tariffs in respect of those items which are still under administrative protection, and the continued gradual reduction of customs rates.

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[23] More detailed discussion of investment incentives will be found in the chapter on Investments.

In April 1968 customs rates will be reduced by an additional 15%. During the next few years, in contrast to the past, "exposure" will be effective, and it will have an important influence on the efficiency of industry. It will lead to the reduction of output in those industries which produce at a high cost per dollar and make it possible to transfer resources from these to more efficient industries; it will also bring about efforts for greater efficiency in the individual enterprise and improvements in product quality. Furthermore, "exposure" will contribute to expansion of exports by making it possible to transfer factors of production, and by enabling enterprises which have enhanced efficiency and improved quality to compete in foreign markets.

As the local market is limited, there is no alternative to a concentrated structure of industry. Effective competition by imports will in many industries be a substitute for competition in the local market and act as an incentive for lowering costs of production. Under these conditions, the Government will encourage the establishment of large enterprises, the amalgamation of small ones, the creation of marketing organizations, and development of subcontracting for export and the local market. These measures will make possible larger volumes of production, greater plant specialization, greater mechanization and the introduction of modern production methods, more efficient marketing, better quality, and the devotion of resources to research and development. The Government will also act for the establishment of industrial estates for similar or complementary industries, where common services will be provided.

The Government and the Labour Federation will encourage additional measures to increase productivity in industry, such as the introduction of incentive pay in those enterprises where it is not yet in force, and the revision of the norms, where they do exist. Incentive pay at present applies to about 50,000 industrial workers, about 23% of the total, and it is estimated that it can be applied to 50,000 more. In addition, in many enterprises which have introduced incentive pay, the prevailing work norms are outdated and should be revised.

In order to prevent an increase in labor costs per unit, a wages policy should be followed which will not in any circumstances allow industrial wages to rise at a rate in excess of the rise in productivity.

Many industrial firms will not be capable of carrying out alone the measures necessary for greater efficiency, and the Government will have to help them.

Lower costs in industry do not depend only on productivity within industry, but also on the efficiency of other branches of the economy which supply industry with inputs and services.

8. Industrial Research

One of the most important means toward the achievement of greater competitiveness for Israeli industry is the improvement of its technological standards through the acquisition of know-how from abroad, as well as independent research and development. This necessitates the maintenance of an extensive system of research and development. Research in Israel is characterized by imbalance between basic and applied research; about three-fourths of all expenditures in research being devoted to basic research. The standards of basic research in Israel are high, and it enjoys world renown, but applied research, especially that in industry, is more limited. In 1966 about IL 115 million[24] was spent on all types of research and development in Israel, but expenditure on industrial research was only IL 27 million, the equivalent of only 1% of the industrial component of the GNP. About one-fourth of this sum came from the Government budget.[25]

Israeli industry is mostly based on know-how imported from abroad. In many cases this is not modern know-how, and the products based upon it have long been available in world markets. Part of the know-how bought in this manner cannot impart competitive capacity to Israeli industry.

Because most Israeli industrial enterprises are small, they are incapable of allocating considerable sums to research and development. Such investments involve a high degree of risk, and if they do yield profits, they do so only in the fairly long run. Many of the enterprises, even the larger ones, lack research consciousness. Industry's orientation to the local market, the high protection accorded in the past against competitive imports and the limited extent of competition within industry — none of these provides sufficient incentive for technological change, independent research and the application of the results of basic research to industry's needs.

During the last ten years the Government has encouraged research through the establishment of industrial research institutes and research grants to Government-owned and private enterprises. After all this, however, the extent of research does not yet match the need.

The National Council for Research and Development has prepared the outline of a master-plan for industrial research, which is at present under consideration by the Cabinet Committee on Science and Technology. The aim of the plan is a gradual increase in investments in industrial research and development from IL 27 million in 1966 to about IL 100 million in 1971/72. If this proposal is carried out, it will increase the investment in industrial research and development to some 3% of the industrial component of the GNP. The Government will have to cover a considerable portion of the expenditure on industrial research. The plan necessitates the addition of about 1,400 research personnel — scientists and engineers — to the 250 researchers presently occupied with industrial research.

The plan indicates several coordinated lines of activity for greater industrial research:

Grants for the establishment of research laboratories in industry and the employment of research personnel.

Research grants: Cash grants will be allocated for the conduct of research projects in bodies and enterprises which have laboratories and research personnel. Grants will be allocated for all stages of research and development, as well as for the establishment of semi-industrial pilot plants. Institutes of higher education will also be eligible for grants with respect to industrial and applied research projects being carried out by them.

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24) Exclusive of research by the defense establishment.

25) Source: Prime Minister's Office, Council for Research and Development.

Expansion of existing research institutes, and the establishment of new ones. Because most existing industrial enterprises in Israel— as well as those to be established in the future— are of a size which does not allow for the operation of their own research units, it will be necessary to carry out most of the research in industry-wide institutes. Thus, it will be necessary to expand existing institutes and establish new ones. The functions of such institutes are to carry out research for specific industries and advise those firms which cannot shoulder the burden of their own research and development.

Scholarship funds. A source of finance is necessary to cover the costs of study in research fields, in order to increase the number of scientists and engineers working in industrial research, and to raise their standards. So far, no such fund exists, and industry has enabled only a limited number of researchers to continue their studies. The proposed fund will allocate scholarships for study in the natural sciences and engineering, at institutes of higher education in Israel and abroad.

Expansion of the activities of the Center for Technological and Scientific Information. The function of this center is to collect know-how and follow technological innovations here and throughout the world, in order to pass on information to industrial enterprises, to advise and guide industry in this connection, etc.

9. Industry's Manpower Requirements

Industry's manpower requirements for the period of this plan have been estimated on the basis of expanding industrial output and the expected increase of output per worker in industry. It has been assumed in this plan that average output per worker will go up at an average annual rate of 4.7% on the basis of 1966, or 5.8% on the basis of 1967.

Taking into consideration the increase in industrial output during the period 1968–1971, and also the rise in output per worker, an additional 54,000 workers will be required by industry during the next four years. The total number of persons employed in industry will thus reach 265,000 in 1971,[26] compared with 211,000 in 1967 and 222,000 in 1966. This constitutes an annual increase of 6% over 1967, and 3.6% over 1966. This will cause industrial employment to rise from 25.4% of the total in 1966 and 1967, to 26.4% in 1971.

Some 52% of the additional workers absorbed in industry will be employed by the metal, machine, electrical equipment and transport equipment industries. This will raise the percentage of industrial workers employed in the metal and machine industries from about 30% in 1967 to nearly 35% of the total in 1971. Nearly 9,000 new jobs will be created in the textile, garment, leather and footwear industries, some 17% of all new industrial jobs. The rubber, plastics and chemical industries will absorb 9.5% of the total, while the food industry, which at present employs nearly 15% of all industrial workers, will absorb only about 6.5% of the new workers.

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[26] Exclusive of persons employed in industry in East Jerusalem, and those required for new projects for the production of items connected with the defense establishment.

TABLE 27. Average Output per Worker, 1966, 1967 and Projection for 1971

Branch	Output per worker (IL thousands)			Annual rate of growth (percentages)	
	1966	1967	1971	1966-1967	1967-1971
Total	31.1	31.3	39.2	4.7	5.8
Mining and quarrying	42.9	41.8	57.8	6.1	8.5
Food	50.7	52.3	58.0	2.7	2.6
Textiles	29.4	31.0	37.8	5.1	5.1
Clothing	15.1	14.7	21.8	7.6	10.3
Wood and wood products	22.3	22.3	28.2	4.8	6.0
Paper, cardboard and their products	38.6	43.1	50.2	5.4	3.9
Printing and publishing	22.4	26.3	31.8	7.3	4.9
Leather and leather products	15.9	14.3	18.6	3.2	6.8
Rubber and plastics	35.6	40.4	46.7	5.6	3.7
Chemicals and petroleum refining	69.9	74.9	100.5	7.5	7.7
Non-metallic minerals	33.8	29.6	39.1	2.9	7.2
Diamonds	52.0	41.2	60.0	3.0	9.8
Basic metals	52.4	48.2	61.5	3.3	6.3
Metal products	20.5	19.8	23.6	2.8	4.5
Machines	24.3	21.6	35.0	7.6	12.8
Electrical and electronic equipment	27.9	27.0	35.8	5.1	7.3
Transport equipment	18.8	19.0	25.4	6.2	7.5
Miscellaneous manufactures	11.8	12.9	18.2	9.1	9.0

Source: Ministry of Commerce and Industry, and Economic Planning Authority.

Just as the required volume of investments is an essential prerequisite for the achievement of this Plan's objective, so manpower will be required in the numbers necessary and of the training and levels of skill required. The intention to develop export industries based on knowhow and skilled workers makes it especially important that higher education and vocational training be adapted to the expected greater demand by industry for university-educated staff— engineers, chemists, managers, etc. — technicians, and other skilled workers.

Table 29 presents an estimate of industry's requirements for manpower of various professional standards in 1971, compared with an estimate of industrial employment in the same skills in 1966. The data included in this table do not actually express all the requirements for the training of manpower at the various levels of skill, since they do not include the numbers necessary for the replacement of those leaving work for any reasons— age, death, change of profession, etc. The numbers presented here understate the order of magnitude of trained manpower requirements. Owing to the technological developments to be expected during the coming years, and the relative rise in importance of science-intensive industries, research and highly professional work, the proportion of university-trained staff— engineers, chemists, scientists, managers, and especially that of technicians will increase, while the proportion of workers now

TABLE 28. Breakdown of Industrial Workers, by Branches, 1966, 1967 and Forecast for 1971

Branch	1966		1967		1971		Annual growth rate (%)	
	thousands	%	thousands	%	thousands	%	1966-1971	1967-1971
Total	222.0	100.0	211.0	100.0	265.5	100.0	3.6	5.9
Mining and quarrying	4.1	1.8	3.9	1.8	4.1	1.5	0.0	1.3
Food	30.3	13.6	31.0	14.7	34.5	13.0	2.6	2.7
Textiles	26.0	11.7	23.0	10.9	29.8	11.2	2.8	6.7
Clothing	14.8	6.7	15.3	7.2	17.1	6.5	2.9	2.8
Wood and wood products	18.5	8.3	16.5	7.8	20.4	7.7	2.0	5.4
Paper, cardboard and their products	3.6	1.6	3.5	1.7	4.1	1.5	2.6	4.0
Printing and publishing	9.1	4.1	8.7	4.1	8.8	3.3	−0.7	0.3
Leather and leather products	7.4	3.3	7.2	3.4	7.8	2.9	1.1	2.0
Rubber and plastics	5.9	2.7	5.3	2.5	7.8	2.9	5.7	10.2
Chemicals and petroleum refining	8.5	3.8	8.2	3.9	10.2	3.8	3.7	5.6
Non-metallic minerals	10.5	4.7	8.4	4.0	11.5	4.3	1.8	8.2
Diamonds	9.5	4.3	11.5	5.5	11.5	4.3	3.9	0.0
Basic metals	4.2	1.9	3.8	1.8	5.2	2.0	4.4	8.1
Metal products	17.3	7.8	14.8	7.0	21.6	8.1	4.6	9.9
Machines	16.1	7.3	16.4	7.8	21.1	8.0	5.5	6.5
Electrical and electronic equipment	8.4	3.8	7.1	3.4	13.4	5.1	9.8	17.2
Transport equipment	22.1	10.0	20.8	9.8	30.1	11.3	6.4	9.7
Miscellaneous manufactures	5.7	2.6	5.6	2.7	6.5	2.5	2.7	3.8

Source: Ministry of Commerce and Industry, and Economic Planning Authority.

TABLE 29. Persons Employed, and Additional Persons Employed, by Levels of Skill,* 1966 — 1971

	1966 **		1971		Addition of workers 1966-71		Average annual growth rate 1966-1971
	thousands	(%)	thousands	%	thousands	%	(%)
Total	222.0	100.0	265.5	100.0	43.5	100.0	3.6
University graduates and managers	6.7	3.0	8.6	3.2	1.9	4.1	5.0
Technicians	5.6	2.5	10.0	3.8	4.4	10.1	12.3
Skilled workers	92.2	41.5	105.5	39.8	13.3	30.6	2.7
Semiskilled and unskilled workers	117.5	53.0	141.4	53.2	23.9	55.2	3.8

* For definitions of skill levels, see chapter on Manpower.

** 1966 data are estimates, based on 1962 data.

Source: Ministry of Commerce and Industry, and Economic Planning Authority.

classified as "skilled" will decline. This will be the result of two contradictory effects: on the one hand there will be a considerable decline in the proportion of workers employed directly in production, and on the other, there will be an increase in the number of skilled workers employed in maintenance. The proportion of semiskilled and unskilled workers will increase slightly.

The educational system should be planned in advance according to the lines of development needed by the economy, in order to prevent shortages of professional and university-trained manpower in the various industries.

Just as important as the expansion of professional training facilities, and their adaptation to the composition of expected demand is the prevention of waste of professional manpower. In several industries, such as carpentry, garment making, leather and metal, production is still based to a great extent on nonindustrial processes in tiny production units; in these, much skilled manpower is wasted owing to the absence of specialization and division of labor, and a backward level of mechanization. A lower skilled-labor component per unit of output can be achieved, without lowering quality standards, by shifting production to larger units with a higher level of mechanization and additional unskilled labor.

D. MINING [1]

As Israel is poor in minerals and other natural resources, its mining industry is limited compared to other branches of the economy. Mines and quarries account for over 2 per cent of the gross industrial output. However, since about 50 per cent of the output is exported, this industry represents approximately 8 per cent of the total industrial exports and about 14 per cent of industrial exports excluding diamonds. Its relative importance among industrial exports is even higher as its added value amounts to 60—70 %.

The industry is highly capitalised, its share in the industrial capital stock reaching 10%, but less than 2% in employment.

Government initiative for mineral development was due both to the desirability of retaining national control over the country's natural resources and to the high capital investments required. The risks involved, deterred large-scale private investment. As a result mineral exploitation, other than building materials and oil prospecting, is wholly or partly government-owned.

TABLE 1. Exports, Investment and Employment in the Mining Industry (excluding Stone Quarries)

Output (1,000 tons)[1] (Main products)	1953	1956	1959	1961	1963	1965	1966
Potash	4	45	105	143	188	498	514
Phosphates	23	116	205	235	300	392	670
Copper	—	—	5.3	6.1	7.8	8.9	10.1
Total exports ($ million)	0.1	1.2	6.5	9.5	10.7	24.6	29.4
Potash	—	0.8	3.4	4.3	5.5	13.2	12.7
Phosphates	—	0.4	0.7	0.9	0.8	2.8	4.5
Copper	—	—	2.4	4.1	4.3	8.5	12.2
Other minerals	—	—	—	0.2	0.2	0.1	—
Employment	—	—	1,380	1,600	1,780	2,040	2,040
Total investment (IL million) at 1966 prices	—	31.8	22.1	41.5	84.1	50.7	36.8

Source: Output (in 1,000 tons) — 1953-1959 — The Statistical Abstracts of Israel, The Central Bureau of Statistics: 1960-1966 — The Ministry of Development.
Exports: 1953-1955 — Foreign Trade and Capital Imports to Israel, M. Michaeli;
1956-1966 — The Ministry of Commerce and Industry; Employment: 1955-1966 — The Central Bureau of Statistics; Investment — The Bank of Israel.

1) Budget (fiscal) years.

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1) This chapter deals mainly with the exploitation of natural resources, other than building materials, available for export or the replacement of imports either in their natural or processed states.

Israel's mineral extraction and processing industry is operating under difficult conditions as far as the international market is concerned. Most of the mineral and basic chemical firms in the world are large concerns. Though not to the same extent for all products, most of the international markets are controlled by cartels. Competition, insofar as there is any, exists only in marginal markets or during certain periods when prevailing contracts are broken. In the chemical fertilizer market there is a considerable degree of Government intervention, especially in the developing countries. Governments frequently are the main buyers basing their purchases also on political considerations, financial terms offered and the utilisation of trade agreements (clearing, etc.).

In view of the relative high transport component, especially when the products are low-priced, some countries have natural advantages in certain geographic areas. Israel, for example, has a natural advantage in East Africa, Asia and East Europe.

TABLE 2. Exports of Main Minerals, by countries (in $ million)

	1961	1963	1966
Copper cement			
Japan	2.4	2.1	1.4
Spain	0.4	1.6	5.0
Hungary	0.2	0.7	2.0
Other countries	1.1	–	3.3[1]
	4.1	4.4	11.7
Potash and phosphates			
Japan	0.8	0.4	1.0
England	0.7	0.9	1.7
Poland	–	0.3	5.0
Hungary	0.5	1.1	0.6
Italy	0.1	–	0.7
Bulgaria	0.1	–	–
Roumania	–	–	0.5
Other countries	3.0	3.8	7.4
	5.2	6.5	16.9

1) Holland.

Source: The Central Bureau of Statistics.

This table shows that a considerable part is exported to Japan and to countries with which Israel has clearing agreements, mainly the various countries of Eastern Europe.

Transport problems involved are both local and international. Israel's minerals are located in the undeveloped areas in the southern part of the country. Simultaneously with the development of mining operations it was therefore necessary to provide appropriate means of transport to convey the extracted minerals to the ports of shipment.

Mineral exploitation during the 50's was too small to justify building a railway which is generally the cheapest means of conveying large quantities of homogeneous material over large distances. Instead large Government-owned trucks were used. The main transport difficulties stemmed from the need to bring the minerals as far as Haifa port in the north, as there was no suitable port in the southern part of the country; from the lack of a properly-equipped port with cheap bulk-loading installations; and from the high altitude difference between the Aravah and Dead Sea area and the mountains and the coastal area in the West. All these difficulties increased the local mineral transport costs and affected profitability of mining operations.

Transport costs declined considerably after the opering of the new Ashdod port, the installation of bulk-loading installations at Eilat and the extension of the railway first to Beersheba and then to Dimona and Oron. At the same time larger quantities were mined.

Overseas shipment of minerals also involved difficulties which for a long period hampered the proper development of the industry. There were no regular shipping lines to the southern and eastern markets, and the lines subsequently opened could not operate profitably because of the imbalance in load traffic, since they carried a much smaller cargo on the return trip.

The extraction and processing of minerals was carried out by a number of companies, each acting independently. Each company had its own research organisation, planning staff and sales department.

The unification of these departments and the coordination of their tasks is likely to increase their efficiency and to reduce expenses.

The interaction between the chemical fertilizer industry, the basic chemical industry, the oil industry and the petrochemical industry is constantly increasing. Products and by-products of the oil industry and the petrochemical industry are used for the production of nitrogen compounds — the third element, apart from potassium and phosphate, essential for agricultural fertilizers.

ISRAEL'S MINERALS AND NATURAL RESOURCES AND THEIR EXPLOITATION

The Dead Sea is Israel's primary mineral reservoir, its water having a salt content of 27% — six to eight times higher than ordinary sea water. The principal salts are:

Mineral	Concentration	Estimated reserves
Magnesium chloride	13%	22,000 million tons
Sodium chloride	9%	11,000 million tons
Calcium chloride	4%	6,000 million tons
Potassium chloride	1%	2,000 million tons
Magnesium bromide	0.5%	1,000 million tons

This high concentration of minerals in conjunction with the special climatic conditions prevailing at the Dead Sea (high atmospheric pressure, strong evaporation and high winter temperatures, a relatively low humidity and little rain) make the extraction economically worthwhile. At present only potassium chloride is extracted on a large scale. It is used mainly as a fertilizer and as a raw material for the production of fertilizers and industrial chemicals. In addition small quantities of magnesium bromide are extracted, which are used as a raw material for bromine production, and sodium chloride (table salt) which apart from its dietetic use is a raw material for the basic chemical industry.

Magnesium chloride may serve as a raw material for the large chemical complex being erected at Arad.

The extraction of potash was begun by the Potash Workds Ltd. at; the northern and southern ends of the Dead Sea long before 1948. After the establishment of the State when only the southern part could be exploited the shareholders transferred the ownership of the enterprise to the Government. In 1952-1955 the first expansion was carried out, the capacity of the plant being increased to 135,000 tons per annum and a road constructed joining Sodom with Beersheba. Due to technical difficulties encountered in the rehabilitation of the plant, the output failed to grow as rapidly as was anticipated and reached the planned target only after five years.

In 1961 plans for a new plant with dykes in the Dead Sea and an electric power station were completed and by 1964 the new plant and power station were erected. In that year the output amounted to 320,000 tons. The evaporation pans, however, were not ready until 1966 since various obstacles were encountered in the execution of the work. By now production capacity of the plant is about 600,000 tons annually. In 1966 the output was about 520,000 tons of which 500,000 tons were exported.

There are several phosphate rock deposits in Israel, of which the major ones are the Oron, Tsefa and En Yahav fields. The P_2O_5 (phosphorus pentoxide) content of these deposits ranges between 25 and 30% and most of them can be extracted by open-cast mining. The quality of the deposits is medium to low compared with the phosphate found in other countries; the P_2O_5 contents of American deposits is 30-35% and of Moroccan phosphates 32-37%.

Phosphate rock is used mainly as a raw material for the production of phosphoric acid which in its turn is used as a raw material for the chemical fertilizer and food industries.

The exploitation of the Oron phosphate deposits started in 1951. The raw material, which had a low P_2O_5 contents of only 21—23%, was processed by Chemicals and Phosphates (then Fertilizers and Chemicals Ltd.) in their Haifa plant. Owing to their poor quality the minerals had to undergo mechanical enrichment to bring their P_2O_5 contents up to 28%. Until 1955 the quantities mined were sufficient only for domestic consumption.

As from that year the output grew rapidly, from 60,000 tons in 1954 to about 220,000 by 1960. At the same time exports started to develop, and by 1960 40,000 tons were sold abroad. The production capacity of the plant amounted to 280,000 tons of material, containing 28% P_2O_5, while pilot plant experiments to reach a P_2O_5 content of 34% were under way.

In 1962 a major expansion project was launched for a planned production capacity of 800,000 tons per annum together with the erection of a calcination kiln to bring up 600,000 tons to a 38% P_2O_5 content. The operation of this calcination plant met with many difficulties and the output still is only about a third of the amount planned with a P_2O_5 content of less than 34%. The total output, however, increased to 670,000, of which 230,000 tons is calcinated and 440,000 enriched. Exports amounted to 460,000 tons 160,000 tons calcinated and 300,000 enriched material.

From the beginning phosphate mining was a difficult proposition because of the comparatively low quality of the Oron deposits. To make the extraction worthwhile, considerable investments — in excess of the initial estimates — were required in mechanical and chemical plants for the enrichment of the phosphate rock. These investments together with the technical problems involved in the operation of the plants — which are partly based on local know-how — reduced the profitability of the operations and caused the Company substantial losses. Addditional problems were the lack of suitable transport facilities for the cheap conveyance of the minerals to the port of shipment and of proper loading installations; and high labor costs owing to the difficult working conditions in that part of the country.

Oil prospecting began in 1953. From 1953 to 1965 201 wells were drilled and in 63 oil and natural gas were found. Most of the oil-bearing wells were not drilled for wildcatting but the development of the fields. Investments in oil drilling over the years amounted to close to IL 200 million (at 1966 prices). In recent years IL 15 — 20 million were invested annually.

Upon analysis of the geological data the experts concluded that the prospecting areas may be classified into three categories according to the probability of either gas or oil being found there. The areas of the first category include the coastal plain and the submarine continental shelf along the coast. To the second category belongs the Dead Sea area including the Western reef, while the Galilee, part of the Northern Negev and the Jerusalem Corridor belong to the third category.

Geophysical surveys and measurements have by now been made in a large part of the country.

All these activities have led to the discovery of oil deposits in Heletz, Beror, Negba, Kokhav, and gas deposits in Zohar, Kidod and Kanim. The proven and commercially exploitable reserves in these drillings are estimated at about 2 million tons of crude oil and 1.6 tons equivalent to liquid fuel, of gas.

TABLE 3. Oil and Natural Gas Output in Israel (1,000 tons)

	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Oil	22.3	56.1	87.5	127.4	160.1	133.9	134.7	159.1	205.5	209.0	186.5
Natural gas[1]	—	—	—	—	—	5.1	8.9	4.8	35.5	77.3	86.0

Source: The Oil Institute.
Until 1959 — calendar years; from 1959 — fiscal years.

1) Liquid fuel equivalent.

The output of the oil and natural gas fields rose from 22,000 tons in 1956 to 270,000 tons in 1966, when it constituted approximately 8% of the total domestic consumption.

Israel's copper deposits are in the Timna area near Elat. The ores so far discovered are of relatively poor quality compared with those of the main copper producers, Chile, Zambia, Congo, etc.

The copper contents varies between 1.2 and 1.8%. Geological surveys have proven reserves of about 20 million tons — 16 million underground and about 4 million suitable for open-cast mining. Possible additional reserves of about 10 million tons have also been discovered in the same area.

The establishment of the Copper Mining Works at Timna was declined upon in 1954. During the running-in period in 1959 the plant produced 3,200 tons of copper cement in terms of pure (100%) copper. The entire output is intended for export. By 1963 the output was 7,800 tons, and by 1966 — 10,100 tons. During 1963 —1966 a number of technical modifications were introduced in the production process as a result of which the production capacity was doubled at a relatively low investment.

During the first few years the Copper Works laboured under various difficulties due to the poor quality of the ore, and insufficient know-how in the operation of the plant. In recent years, however, with soaring copper prices and as a result of improved know-how and better utilization performance of the plan, considerable profits were earned despite the low quality of the ore.

In addition to the above mentioned minerals there are deposits of glass sand and clay in the southern part of the country which are also commr commercially exploitable. The country is also rich in building materials, especially stones for building, marmor, plaster of Paris, and raw materials for cement.

The clay and sand in Makhtesh Ramon and Makhtesh Gadol were exploited mainly for the local ceramics and glass industry. In 1964 the erection of a plant for the production of flint-clay for export started. At the end of 1965 serious difficulties were encountered in the operation of the plant, owing to the lack of sufficient high quality raw material and of suitable export outlets. The plant was therefore temporarily closed in 1967 until a satisfactory solution to these problems will be found.

MINERAL PROCESSING

In the past mineral processing for the production of fertilizers, animal feed additives and industrial chemicals was carried out almost exclusively for the domestic market. Only bromine and compounds were processed for export.

The production of chemical fertilizers is carried out by Chemicals and Phosphates Ltd. in Haifa.

During 1953 —1959 a series of plants was set up for the production of sulphuric acid potassium sulphate, ammonia, phosphoric acid and nitric acid.

TABLE 4. Output of Main Basic Chemicals, 1953—1966 (in 1,000 tons)

	1953	1956	1959	1964	1965	1966
Superphosphate	33	96	94	112	107	58
Sulphuric acid	16	73	119	160	156	159
Ammonia	—	7	19	31	31	33
Ammonium sulphate	—	26	65	80	78	77

Source: The Statistical Abstracts of Israel, The Central Bureau of Statistics.

Throughout its existence the Company had to contend with serious economic difficulties. The erection of the various plants usually took a long time and involved investments which were higher than originally planned. Since the enterprise was intended mainly for the supply of the local fertilizer market, its plants were planned to the appropriate size for this purpose and as a result were much smaller than the technological optimum so that production costs were high. In addition there were various management problems, financing difficulties and a manpower surplus which interfered with effective operations. To achieve greater rationalisation and enhance their development potential the Phosphate Works in the South and the Fertilizer plants in the north accordingly concluded a merger at the end of 1962.

THE DEVELOPMENT PLAN OF THE MINING INDUSTRY, 1968—1971

The development plan of the mining and mineral processing industry (which is included according to industrial classification: chemical industry) envisages an investment of about IL 300 million during 1968—1971 — about IL 200 million in mineral processing plants included in the basic chemicals industry and about IL 100 million in the expansion of the mining works and the replacement of obsolete and discarded equipment. In addition it is intended to spend some IL 85 million on oil prospection.

The number of employed in this sector will grow by 700 only, from which about 300 will be in the quarrying and about 400 in the processing part (mainly in the new chemical complex in Arad).

Plant expansion and the erection of new plants is expected to increase the mineral output by 60 % and the output of mineral products by 250 %. Exports are expected to increase from $ 33 million in 1967 to about $ 70 million by 1971 ($ 14 million of minerals and $ 23 million of mineral products).

Coordinated development of the mining and mineral processing works is to be achieved by means of a parent company — Israel Chemical Industries Ltd. — which will draw up comprehensive plans for the most effective utilization of the local raw materials for the production of chemicals and fertilizers.

SURVEY OF DEVELOPMENT PROJECTS

1. Mining

The expansion of the Dead Sea Works contemplated during 1968—71 is a continuation of the expansion programme started in 1960, which is made up of two parts:

a. The completion of Stage I, including the installation of salt and karnallite evaporation pans.

b. The erection of a second potash distillation plant, expansion of the storage facilities at Ashdod Port and small additions to the salt and karnallite ponds.

The investment in fixed assets amounts to IL 45 million, and the production capacity of the Potash Works will be increased from 600,000 tons to at least 1 million tons by 1971.

As a result of the Six Days War it seems uncertain whether the East European markets which bought a considerable portion of the output in the past will continue to do so. It is therefore intended to conduct an intensive export drive especially in the Far East. To reduce transport costs from Sdom to Eilat the laying of an 8' potash pipeline to Eilat is now being studied.

As a result of the enormous increase in the world output the export price of potash has fallen by more than 20%. The demand and supply forecasts for the 70's show that the supply is likely to increase only gradually as a result of plant expansion whereas the demand will probably grow faster and prices will remain stable or may even rise. Export forecasts are accordingly based on a price of $ 25 per ton in 1971 and export sales of about 950,000 tons, while about 50,000 tons will be sold to Haifa Chemicals for the production of potassium nitrate.

The development plans of the Phosphate Works in Oron envisage no further investments for the expansion of the plant, but only marginal investments for the replacement of obsolete equipment and the expansion of the mining area. The main stress will be laid on solving the technical problems involved in the full operation of the calcination kiln for the enrichment of the phosphate rock.

The present phosphate reserves in the Oron field are estimated to last until the middle of 1970 when mining will have to be carried out in more distant fields where the P_2O_5 content of the rock is lower and the sulphate content higher. The Company is carrying out research with a view to solving the problems which will arise in the operation of the calcination kiln once these deposits will have to be used.

The projected investments amount to IL 15 million and will be carried out only after research has shown them to be worth while.

The output is estimated at about one million tons, half of it calcinated material. Most of the output (about $ 9 million) will be exported.

In the Timna Copper Works the main investment will be in the expansion of mining operations and geological surveys. Copper prices are expected to decline. Some 12,000 tons worth $ 12 million will be exported.

This forecast is based on the assumption that the international boom, due to the Vietnam War, will fade and that the principal producers will not suffer from non-production and delays.

Oil prospecting is expected to be carried out more intensively than in the past at an annual expenditure of IL 20—25 million. Work is expected to proceed regularly with the assistance of foreign investors.

Concessions will be allotted on a regional-geological basis. Each company will be given an entire region to explore. This policy has been formulated by the desire to enable the companies to map out and organize their work for a period of 3—5 years, to lay down a certain order of priorities for its drillings on the basis of a careful geological and geophysical survey and to continue surveying in other sections while it is carrying out its first drillings.

2. Mineral Processing

During the period under review the projected Chemcial Complex will be erected in Arad in collaboration with a large American firm. This complex is designed to produce 230,000 tons phosphoric acid equivalent to 165,000 tons of P_2O_5 (phosphorus pentoxide), using magnesium chloride conveyed to the plant by pipeline from the Dead Sea Works, and phosphate rocks from the phosphate deposits discovered in Nahal Tsefa. From the brine (salt solution) some 400,000 tons hydrochloric acid will be produced by a process developed by Israel Mining Industries. This in turn will be used for the production of phosphoric acid from phosphate rock. The plants should be in operation by the end of 1969.

The main uses for phosphoric acid are for the production of concentrated chemical fertilizers, such as triple superphosphate and composite fertilizers. It is also used for the production of detergents, industrial chemicals and phosphates used for animal feed. The company already has contracts for the sale of 70,000 tons of phosphoric acid to an Italian firm as from 1970. The erection of the complex will cost about IL 100 million and exports are expected to amount to $ 12 million in 1971.

Also in the erection stage is a plant located in Haifa for the production of potassium nitrate and phosphoric acid. As raw materials it will use potash from the Dead Sea, phosphate rock from the Negev, and locally-produced ammonia (an equivalent of 16,500 tons P_2O_5. Its planned output capacity is 100,000 tons potassium nitrate and 22,000 tons phosphoric acid. Potassium nitrate is used as a fertilizer. About half the output will be sold under a long term contract. The phosphoric acid produced will be of the type used in the food industry. Practically the entire output of this plant is intended for export. The investments will amount to IL 40 million and by 1971 exports are estimated at $ 6 million.

CHAPTER TWELVE: ELECTRICITY[1]

The most important form of power supply in Israel is electricity. Ninety-six percent of the national generated output is supplied by the Israel Electric Corporation (IEC), the great majority of the shares of which are owned by the Government; the remaining 4% is largely accounted for by generation for internal consumption by industrial enterprises and isolated villages. The power generated by IEC is distributed over a national network that today stretches from Metulla in the north to Eilat in the south.

A. HISTORICAL DEVELOPMENT

At the end of 1947, the installed capacity of the Palestine Electric Corporation was approximately 75 Mw, and that of the Jerusalem Electric and Public Service Corporation approximately 9 Mw. During the War of Independence, the 18-Mw Naharayim station was incorporated in Jordanian territory, but in August 1948 an additional thermal set was commissioned at Reading Power Station, and this made good most of the shortage of generating capacity.

Rapid economic development resulted in an increased demand for electric power, and a consequent reinforcement of generating capacity of the IEC. Electricity consumption has risen from 261 million kwh in 1948 to approximately 3,850 million kwh in 1966, an annual increase of about 16%.

During this period of rising demand for power, the relation between consumption by various types of consumer has not remained constant. Up to 1960, the demand for irrigation purposes rose very rapidly. In the period 1955—1960, industrial demand also increased at a high rate. As a result, the share of the total supply taken by these branches of the economy increased, and that accounted for by domestic, commercial, and institutional demand decreased.

Since 1960, that part of the overall demand represented by industry has been more or less stable, while the proportion utilized for irrigation has fallen. The rise in the standard of living has resulted in an increase in the share of domestic consumption, and the development of public and business services has augmented their demands.

Annual per capita consumption has risen from 299 kwh in 1948, to approximately 1,460 kwh in 1966. The rate of rise has not been steady, dropping from 28% per annum in the period 1948—1952, to about 13% per annum in 1961—1966. The average rate for the whole of this period is about 9%.

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[1] The source of most of the data appearing in this chapter is the IEC.

TABLE 1. Breakdown of electricity demand (percentage)

	1950	1955	1960	1965
Irrigation	18.3	24.2	27.5	25.0
Industry	30.3	28.9	35.7	34.5
Other uses	51.4	46.9	36.8	40.5

Sources: Central Bureau of Statistics and IEC

The generating capacity of IEC during this time has kept pace with the demand. In 1950, the available capacity was about 110 Mw; by 1955 it had risen to about 240 Mw, and in 1967 it reached about 1,000 Mw.

Generation is concentrated in four plants: Haifa, Tel Aviv (Reading Power Station), Ashdod, and Eilat[2]. The requirement for large quantities of cooling water has dictated the location of all these plants at coastal sites.

TABLE 2. Installation of generating capacity (Mw)

	Period installed			
	Total	Up to 1948*	1949-60	1961-67
Total	1,012	60	350	602
Haifa	526	24	60	442
Tel Aviv	176	36	140	—
Ashdod	300	—	150	150
Stand-by stations and others	10	—	—	10

* Excluding stations in Jerusalem

The gross capital stock of electric power installations has grown from IL 152 million in 1950, to IL 1,205 million in 1967 (at 1966 prices[3]). The capital invested in the power-supply industry has been increased as follows (1966 prices[3]): 1950—54 — IL 178 million; 1955—59 — IL 440 million; 1960—64 — IL 346 million; 1965—67 — IL 292 million.

In this period, labour productivity in the electricity supply industry rose: the average number of employees[4] per million kilowatt-hours generated fell steadily from 3.2 in 1957, to 1.1 in 1967, and in the least few years, there has even been a small reduction in the actual work force of the corporation. In the same period, the fuel consumption per kilowatt-hour generated fell by about 10%, while capital investment[5] per kilowatt-hour generated fell by about 30%.

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[2] A dual-purpose power station was constructed in Eilat in 1965. In addition to supplying current, the station will provide fresh water, obtained by the distillation of sea water. Its electrical capacity is approximately 6,700 kw; the planned fresh-water output is 3,780 cubic meters per day.

[3] Source: Statistical tables compiled by Dr. Gaathon of the Bank of Israel.

[4] Permanent staff.

[5] Gross capital stock at 1966 prices.

These developments are the result of the installation of large units of modern design, and measures to improve efficiency. The units added toward the end of the nineteen-fifties are 75 Mw sets; those installed in the last few years are rated at 141 Mw.

In Israel, the peak demands[6] for electricity are encountered in the morning and evening hours of the summer months. In this respect, Israel differs from other countries; this peculiarity is a consequence of the high consumption for water pumping and irrigation. The main components of the peak summer morning load are, in order of importance; industrial consumption, water supply (including irrigation), domestic demand, and institutional and commercial demand. In the evening, the main components (again in order of importance) are: domestic demand, institutional and commercial demand, water supply, and industrial demand.

By the introduction of appropriate tariffs and the negotiation of special arrangements with large users, the Corporation has succeeded in reducing peak demand and increasing demand during off-peak hours, but there is still a considerable difference between the peak and the average demand. This difference is expressed as the load factor of the system, which is the ratio of the average to the peak load, expressed as a percentage. Obviously, the higher the load factor, the better is the utilization of the installed capacity.

The load factor in Israel has been steadily raised from 55% in 1954 to 72% in 1966 — one of the highest in the world.

B. ELECTRICITY TARIFFS[7]

The price of electricity varies according to the consumption of the consumer, the time at which current is drawn, the type of appliance constituting the load, etc. There are also different tariffs applying to different classes of consumer.

The following table gives the average cost of electricity to the various types of consumer in 1966/67. The average cost of electricity to the consumer was somewhat more than 5 agorot per kilowatt-hour.

	Agorot per kwh
Commercial, institutional, etc.	9.37
Domestic	7.07
Agricultural settlements	5.40
Water pumping (excluding irrigation)	4.18
Industrial	3.31
Irrigation	2.88

[6] The peak demand is the highest demand, as measured at the power stations. It thus includes the internal requirements of the power stations and the losses in the distribution network.

[7] The electricity tariff currently in force was introduced on 1. November 1966.

The tariff is based on the following principles:

a) Spreading the demand for electricity over the hours of the day and the seasons of the year. For this purpose, for example, a reduced rate is charged for electricity used for water heating at night. Special cheap tariff arrangements are negotiated with large industrial organizations and the national irrigation authorities, authorizing the IEC to specify the periods when these users may take current and to shut off the current at times of peak load.

b) Government policy on priorities for the different branches of the economy.

c) Division of the fixed production costs among groups of consumers in proportion to their shares in peak load. (Domestic and commercial consumption accounts for 40% of total annual demand and 60% of peak load). The percentage of fixed costs apportioned to domestic consumption is calculated in accordance with its percentage of the winter peak load, the remainder being spread over the other consumers.

d) Division of costs of electricity distribution and services among the groups of consumers in proportion to the weight of each group in the total number of consumers. The fact that domestic, commercial, and institutional consumers constitute more than 90% of the total number of consumers is taken into account in the division of these costs.

e) A reduction in the rate in accordance with increase in quantity supplied. Owing to high fixed costs, the cost of electricity falls rapidly as output increases.

C. PREDICTED FUTURE DEMAND FOR ELECTRICITY

Figures for recent electricity consumption and estimates up to 1978 are given in Table 3. The estimates, which are based on a detailed investigation of groups of individual consumers, indicate that consumption will rise from about 4,200 million kwh in 1967 to about 5,700 million kwh in 1971, an average annual growth of 8%, while per capita consumption will increase at an average annual rate of 5%. The estimated rates are lower than the actual increases in the period 1961—66, when they were 12.6% and 8.5% respectively. A reduction is forecast in the share of total consumption accounted for by water installations: from 24% in 1967 to 21% in 1971.

Domestic consumption will grow as a result of population increase and a rise in the standard of living. The number of domestic consumers is expected to increase at an annual rate of about 3% and average consumption per domestic consumer by about 5% a year.

A considerable degree of concentration is to be found in the industrial demand: 27% is accounted for by seven enterprises and another 12% by ten more. The main industrial consumers are the chemical, minerals and metal industries. In the period 1967—71, the degree of concentration will become greater, as the large industrial organizations are expected to increase their consumption faster than the medium and small companies. It is anticipated that the industrial demand for electricity will rise at a rate of about 10% per annum, the rate of growth increasing in the latter part of the period, following the commissioning of large chemical plants for processing minerals and the expansion of the petrochemical industry.

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TABLE 3. Electricity consumption, 1956–66, by main types of consumers, and estimates for 1967–71* (million kwh)

Year	Domestic	Public and commercial	Industrial	Water, excluding National Water Carrier	National Water Carrier	All water installations	Total consumption	Average per capita consumption (kwh)
1956	289	127	350	340	—	340	1,106	604
1961	511	296	796	527	—	527	2,130	973
1966	1,008	619	1,253	734	236	970	3,850	1,461
1967	1,090	695	1,390	705	300	1,005	4,180	1,540
1971	1,525	1,000	2,000	780	420	1,200	5,725	1,865
1978							9,800	2,100
Average annual percentage rates of increase								
1956–61	12.1	18.4	17.9	9.2	—	9.2	14.0	10.0
1961–66	14.6	15.9	9.5	6.9	—	13.0	12.6	8.5
1966–71	8.5	10.1	9.8	1.2	12.2	4.3	8.2	4.9
1971–78							8.0	5.5

* Fiscal years.

The use of electricity by water installations falls under three heads: the National Water Carrier, other irrigation systems, and urban supply. Most of the increase in the demand for water pumping will be the result of rising consumption by the National Water Carrier — from 236 million kwh in 1966 to 340 million kwh in 1968. From 1969, the permanent annual demand by the Carrier will be approximately 420 million kwh.

The estimate for the peak load for the period of the plan and subsequently (see Table 4) seems to be somewhat conservative the anticipated rise in the Gross National Product may lead to a peak demand 10% higher than the forecast — mainly because of increased industrial production. Nevertheless, the peak-demand forecast has not been raised, on the ground that ways may be found of spreading the demand. The possibilities of advancing the power-station building programme in the period of the plan are limited.

D. EXPANSION OF GENERATING CAPACITY

IEC's programme of capital investment for the expansion of generating capacity is based on the fact that capacity must be higher than peak demand because available capacity is sometimes reduced by maintenance and repair work, and a certain reserve is necessary to minimize the danger of serious interruptions in supply. IEC considers it necessary to have a reserve capacity of 5% to cover maintenance, as well as additional reserve capacity more or less equal to that of the largest generating station. It is, moreover, intended to withdraw from routine operation during the seventies the oldest units in the Reading A and Haifa A stations.

The generating sets planned for installation during the period 1969—75 will be 214-Mw units; subsequently installed sets will probably be rated at about 300 Mw. An examination of Table 4 shows that, in most years in which it is planned to commission a new set, the reserve capacity will be smaller than the installed capacity of the largest station.

The IEC capital investment program for 1967—71 falls under two heads: the first covers the installation of two 214 Mw units; the second covers building and installation work intended to improve the existing transmission and distribution network. Under the latter head, mention should be made of the raising of the voltage of the main transmission lines from 110 kv to 150 kv, for technical reasons, connected with the load of the network, and economic reasons — the reduction of transmission losses.

Capital investment for the period of the plan will be IL480 million,[8] divided almost equally between the years 1968—1971. Of this sum, 45% will come from the Corporation's own financial resources and the rest from public issues. Government loans, and credit from suppliers — an accepted method of financing in this branch of industry. The investment in the two new units A and B will come to IL171 million, 60% of which will be in foreign currency.

The production cost of electricity generated in the new stations will be 1.7 agorot per kilowatt-hour, compared with 2.1 agorot for the existing units. The average total production costs will be reduced from 5.5 to 5.1 agorot per kilowatt-hour. The reduction in costs (a continuation of an existing trend) will be the result of improvements in station efficiency, and the introduction of larger units with lower investment and operating charges per kilowatt-hour.

Turnover will rise from IL221 million in 1967, to IL304 million in 1971, on the assumption of unchanged tariffs for the different categories. The breakdown for 1967/68 is estimated at: IL46 million — industrial consumption; IL30 million — water pumping; IL82 million — domestic consumption, and IL63 million — various other uses. The corresponding figures forecast for 1971/72 (at 1967 prices) are, respectively: 68, 36, 110, and 90 million Israel pounds. The expected reduction in the average real cost in the seventies will make it possible to consider lowering tariffs, while maintaining a reasonable return on the invested capital.

The possibility of building nuclear power stations in Israel has recently been discussed, but it seems unlikely that they will be erected at least in the period up to 1971. Studies in this field have shown that, even after further technological improvements are to be expected in the early seventies, such stations of a size appropriate to the Israeli demand will be uneconomic, as they involve higher investments than conventional stations and the savings in fuel will not compensate for the difference.

Discussions have also taken place on the possibility of building dual-purpose nuclear stations, for the generation of electricity and the desalination of sea water,[9] but no decision has yet been reached.

8) In fixed assets: about IL 450 million.

9) See chapter 10, Water Resources.

TABLE 4. National demand for electricity and generating capacity, 1961–66, and estimates for 1967–77* (in megawatts)

	Peak demand	Generating capacity**	Reserve capacity		Largest unit	Remarks
			Before commissioning of new units	After commissioning of new units		
1961	458	560	102	—	75	
1966	762	871	-24	109	141	
1967	835	1012	46	177	141	
1968	905	1012	107	—	141	
1969	970	1012	42	—	141	
1970	1030	1226	-28	196	214	Commissioning of new unit A
1971	1110	1404	116	294	214	Commissioning of new unit B and withdrawal of of 36-Mw Reading unit
1972	1200	1618	204	418	214	Commissioning of new unit C
1974	1400	1832	218	432	214	Commissioning of new unit D
1976	1625	2108	207	483	300	Commissioning of new unit E and withdrawal of 24-Mw Haifa unit
1977	1760	2408	348	648	300	Commissioning of new unit F

* Fiscal years.

** Generating capacity after commissioning of new units in the years concerned.

TABLE 5. Estimated investments for 1966–78* (million IL, at 1966 prices)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Total	98.0	90.2	121.5	128.8	107.0	122.5	98.5	107.0	118.0	138.0	115.0	119.0	116.0
Existing stations	2.5	1.5	1.6	1.6	1.7	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
Haifa C	34.9	10.8	1.6	–	–	–	–	–	–	–	–	–	–
New unit A	2.0	27.9	57.0	20.0	2.0	–	–	–	–	–	–	–	–
New unit B	–	–	–	44.0	16.0	2.0	–	–	–	–	–	–	–
New units C–F	–	–	–	–	25.0	55.0	30.0	40.0	49.0	67.0	40.0	45.0	39.0
Main transformer substations	7.8	6.7	9.5	9.0	9.0	9.5	9.5	10.0	10.0	10.5	10.5	11.0	11.0
High-voltage lines	6.4	3.4	6.5	6.0	6.0	6.0	6.5	6.5	6.7	7.0	7.0	7.0	7.0
Distribution networks	24.0	23.1	26.5	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0
Interest on investment in plants under construction	6.1	2.6	4.5	7.5	5.5	5.1	6.7	3.4	4.0	3.8	6.1	3.2	5.1
Miscellaneous	14.3	14.2	14.3	14.2	14.8	15.7	16.0	16.7	17.3	18.1	19.2	20.0	20.5
(Gross investment in fixed assets)	(89.0)	(85.0)	(114.0)	(118.0)	(98.0)	(114.0)	(91.0)	(100.0)	(110.0)	(130.0)	(105.0)	(111.0)	(107.0)

* Fiscal years.

CHAPTER THIRTEEN: TRANSPORTATION AND COMMUNICATION

A. INTRODUCTION

This sector of the economy supplies other sectors with services, such as internal and external freight transport, and postal communications. It also offers services directly for private or public consumption, such as passenger transport or mail deliveries. The aviation and shipping services of this sector also constitute a considerable part of Israeli exports.

Government policy concerning the transportation and communications sector has been largely influenced by political and social considerations, in addition to economic ones.

Politically, the maintenance of an Israeli-owned system of air and sea transport is vitally important, especially in times of crisis, when foreign companies are liable to refrain from operating from and to Israel. Well-developed systems of land transport and internal communications support the effective settlement of the development areas, and also serve the defense establishment.

From the social point of view, the Government's policy on land passenger transport has been determined by the desire to provide low-cost public transport for the population. This was one of the considerations which in the past led to restrictions on the import of private cars and high tax rates on their purchase, maintenance and operation, as they were considered a luxury.

Overland passenger transport in Israel is characterized by the high proportion of public transportation. This phenomenon is due to the Government policy of restricting passenger cars, which was influenced, in addition to social considerations, by the desire to prevent continually rising foreign currency expenditures, and to counteract the increasing pressure for the expansion of the urban and interurban road system which accompanies increases in the number of vehicles. Nevertheless, the problem of traffic density increased in severity, especially in urban centers, where infrastructure development lagged behind the rapid increase in the number of motor vehicles. In recent years the emphasis has been on the elimination of bottlenecks in urban transportation, and interurban transport has begun to shift to multi-lane roads. Toll roads, common in some Western countries, do not exist in Israel today.

At sea, Israel's merchant marine operates lines from and to Israeli ports, and also between foreign ports. The fleet's expansion on the lines to Israel is limited to a certain share of total haulage; the industry's rapid expansion is conditional upon increasing penetration of international ocean-going commerce. On the regular lines, the market is organized in conferences, which restrain competition. In tramp shipping, on the other hand, competition is stiff.

Aviation from and to Israel is closely connected with the tourist industry; most of the passengers are tourists. Coordinated development of the two industries can contribute to the export of Israeli services.

Posts and telecommunications are characterized by the major role of telephone services, which have been developing rapidly since the early 1960s. — partly owing to greater economic activity and the rapid rise in the standard of living during those years.

Government activity is notable primarily in aviation, airports, harbors, most of ocean shipping, railways, posts and telecommunications. These are owned by the Government, either through corporations, such as El Al and Zim, or directly, like the posts and Israel Railways. The naturally high degree of centralization, and the difficulty of raising large sums of private capital to finance investments, which can yield profits only in the long run, are typical of these enterprises.

Overland transport is mostly owned by well-organized cooperatives, which have been entrusted with the public service and enjoy economies of scale. Government intervention here is limited to price fixing and subsidies.

1. Past Development

Transportation and communications developed rapidly during the period 1950—1966. Product, as the share of Gross Domestic Product, at factor cost,[1] increased by a factor of 6.6 since 1950, while exports increased fivefold since 1952. This sector's product increased more rapidly than that of the economy as a whole; the average annual increase was 12%, compared to about 10% for the GDP. This growth was made possible by the doubling of the number of persons employed, the tenfold expansion of the capital stock, and considerably greater efficiency, due to technological changes in the equipment used and better utilization of the equipment.

TABLE 1. Transportation and Communications, as Part of the Israel Economy, 1950 - 1966

	1950	1954	1959	1965	1966
Transportation and Communications, as percentage of:					
Net Domestic Product*	6.9	8.3	8.6	9.8	9.3
Total exports**	27.6***	17.8	15.1	15.7	14.5
Invisible exports**	57.1***	51.7	44.7	36.4	34.3
All gainfully employed	6.7	6.3	6.2	6.3	6.6
Capital stock*	14.6	19.1	17.9	20.1	21.2

* At current prices.

*** 1952.

Sources: Product exports - Central Bureau of Statistics.
Capital Stock - Dr. Gaathon, Bank of Israel.
Employees - Bank of Israel, Central Bureau of Statistics and Economic Planning Authority.

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[1] In terms of 1955 prices. Source: Dr. Gaathon, Bank of Israel.

The relative weight of transportation and communications services in total exports and in invisible exports declined, owing to the rapid expansion of visible exports, and also of services, mainly tourism.

There were noticeable differences in the rate of the sector's development and the composition of its investments during the period under review.

During the first period, from 1950 until 1954, transportation equipment and roads were renewed after the ravages of the War of Independence. Road networks and rail lines were adapted to conditions in the newly formed State, and national corporations were set up for aviation and shipping. About 70 % of investments in this sector during the period were made in overland transportation, mainly in the interurban road network and the connection of newly established settlements. During 1949—51 the aviation and shipping companies were mostly occupied in bringing immigrants to Israel. The Gross Domestic Product of the sector[2] increased from 1950 to 1954 by an annual average of 18 %.

During the second period, 1955—1959, shipping expanded, and so, to a lesser degree, did aviation. The shipping industry was financed largely by reparations funds, and investment in vessels was 25 % of all the investment in the sector. In contrast, the volume of investment in overland transportation declined, and so did investment in roads. The oil pipeline from Eilat was laid during this period, considerably reducing the cost of internal oil transport. The rate of growth of the product slowed down and averaged 11 % a year, approximately the same as the growth rate of the entire economy.

During the third period, 1960—65, the sector's product expanded at an average annual rate of 12 %. Average annual investment, in real terms, was 2.4 times what it had been during the previous period, reaching a record of IL 655 million, in terms of 1966 prices, during 1964. In overland transportation, the investment in vehicles went up, amounting to almost one-third of all the investments in the sector. Road traffic increased rapidly, owing to the much larger number of vehicles, and a rapid expansion of the road network was begun. During this period a great expansion of the telephone network began. The rapid rise of tourism in Israel led to the growth of the civilian air fleet during 1961 and 1962. On the average IL 100 million in real terms were invested every year in the expansion of the shipping industry by the purchase of ships. Greater traffic in the harbors and airports made expansion necessary. A new harbor was built in Ashdod, and Lod (Lydda) Airport was enlarged.

The years 1966 and 1967, the period of the economic slowdown, witnessed lower activity in this sector, and its product declined by 1 %. Investments in vehicles were 60 % lower than in 1965, and part of the equipment was kept idle. On the other hand, investment in urban and interurban roads remained at a high level, reaching a record IL 123 million in 1967. This was due to the Government policy of using this method of encouraging economic activity during the general slowdown. Investment in the telephone network continued to go up; because demand increased slowly the backlog of outstanding applications for telephones was reduced.

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[2] At 1955 factor costs.

(a) Composition of Product and Investments of the Transportation and Communications Sector

Between 1950 and 1966, several changes took place in the relative development of component branches of this sector. Among the causes of this was the relatively slow rise in demand for public transport services owing to the transition to private vehicles, the slower increase in rail transportation, compared with trucks, and the rapidly rising demand for telephones since 1961. In respect of international activity — in shipping and aviation — these fluctuations were partly due to changes in the international price levels of these services.

TABLE 2. Composition of Net Domestic Product of Transportation and Communications, in Terms of Current Prices, 1952-66 (percentages)

	1952	1954	1959	1964	1966
Total	100.0	100.0	100.0	100.0	100.0
Passenger transport	27.4	28.9	25.4	15.1	15.1
Shipping and harbors	20.4	19.3	23.3	23.3	18.9
Aviation and airports	6.0	7.2	6.5	8.0	8.3
Railways	6.2	4.7	3.6	3.0	3.4
Posts and Telecommunications	12.1	11.7	11.4	12.9	16.5
Miscellaneous (trucks etc.)	27.9	28.2	29.8	37.7	37.8

Source: Central Bureau of Statistics.

The ratio between capital stock and Gross Domestic Product, was 3.2 in transportation and communications, compared with 1.9 for the whole economy. Capital stock per person employed (capital stock without roads, at the beginning of the year, at 1966 prices, divided by the average number of persons employed during the year) was 2.5 times higher in this sector in 1966 than the average for the whole economy; from IL 7,500 in 1950 it rose to IL 51,000 in 1966. This increase in capital intensity by a factor of 6.8 during these years is to be explained mainly by the rapid development of aviation and shipping, which are very capital-intensive, the rapid development of the automatic telephone network during the last seven years, and technological changes due to the development of larger vehicles. About 70% of all investments in this sector were made after 1960, mostly in vehicles, shipping and telecommunications.

The number of persons employed in transportation and communications doubled from 28,000 in 1950 to 58,000 in 1966. About 40% of this increase in employment took place during the years 1959—1965.

Greater input in transportation was accompanied by greater efficiency, especially up to 1959. From 1959 to 1965 efficiency went up more slowly, partly because of lower capital utilization after investments had been made in roads and harbors, which by their very nature are long-term investments, and also because of the rapid expansion of production potential, which was not always accompanied by parallel increases in demand.

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3) At factor costs.

4) Sources: Dr. Gaathon, Bank of Israel.
Central Bureau of Statistics.

TABLE 3. Breakdown of Investment in Transportation and Communications, 1950 - 1967
(IL millions and percentages at 1966 prices)

	Total 1950 - 1967		1950 - 1954		1955 - 1959		1960 - 1965		1966 - 1967	
	IL m.	%	IL m.	%	IL m.	%	IL m.	%	IL m.	%
Total	4,869	100.0	625.6	100.0	874.1	100.0	2,503.7	100.0	866.0	100.0
Overland transport	2,419	49.7	433.4	69.3	362.0	41.4	1,166.7	46.6	456.5	52.7
Roads	(936)	(19.2)	(272.6)	(43.6)	(119.4)	(13.7)	(338.3)	(13.5)	(205.4)	(23.7)
Railways	(201)	(4.2)	(48.2)	(7.7)	(76.0)	(8.7)	(47.0)	(1.9)	(29.3)	(2.4)
Vehicles	(1,282)	(26.3)	(112.6)	(18.0)	(166.6)	(19.0)	(781.4)	(31.2)	(221.8)	(26.6)
Aviation and airports	276	5.7	35.9	5.7	79.2	9.1	118.9	4.7	41.7	4.8
Shipping and harbors	1,228	25.2	106.7	17.1	241.2	27.6	780.0	31.2	100.6	11.6
Posts and Telecommunications	774	15.9	49.6	7.9	82.5	9.4	396.0	15.8	246.3	28.5
Miscellaneous	172	3.5	. .	. .	109.2	12.5	42.1	1.7	20.9	2.4

Sources: 1950 - 1959, Dr. Gaathon, Bank of Israel.
1960 - 1966, Central Bureau of Statistics.

During the recession, the productive capacity of this sector continued to rise in spite of lower output; this resulted in lower capital utilization. Thus at the end of 1966 about 16% of all trucks were not active, compared with only 2% in 1961.

(b) Export of Transport Services

The exports of the sector include income from Israeli carriers at sea and in the air, and foreign currency receipts from port and airport services, but not the foreign currency received by Israeli carriers for the transport of merchandise to Israel. The rapid development of merchandise shipment from Israel, tourist traffic to and from Israel, and the transport of goods between foreign ports by the Israeli merchant fleet, all contributed to a fivefold increase in the sector's foreign currency earnings between 1952 and 1966.

In merchant shipping there were considerable fluctuations in the international price level; in aviation technological advances have caused a continuous decline of prices. The added value earned by the type of sector is relatively low: on the average, 15—20%. The cost per dollar earned varies with the vessel or plane used and the lines on which it operates.

TABLE 4. Export of Transport Services, by Major Categories,[1] 1959–1966 ($ million)

	1959	1961	1963	1965	1966
Total	40	65	86	111	119
Shipping	24	35	55	73	78
Freight from Israel	5	6	7	14	12
Freight between foreign ports	8	14	28	34	41
Passengers	7	7	9	13	11
Other earnings	3	8	11	12	14
Aviation	16	30	31	38	41
Freight	1	2	2	2	3
Passengers	13	20	24	28	30
Other earnings	2	8	5	8	8

1) On the basis of imports FOB.

Source: Central Bureau of Statistics.

2. Development Plans for Transportation and Communications, 1968 — 1971

Government influence, in one way or another, on the various branches of transportation facilitates planning. The Ministry of Transport has set up a special Economic and Planning Unit, which is active in this field. Teams have been set up to plan Lod Airport and urban transport systems, and recently also for the preparation of a long-range plan for domestic overland transportation.

The plans for the development of the interurban road network are based primarily on a long-range development plan prepared by a French team and amended by the Ministry of Labor's Public Works Department. The Ministry of Posts prepared a master-plan for the development of communications between 1966 and 1980, as well as more detailed telecommunications plans for shorter periods of time. These plans, and others now in preparation, were the basis for the plan presented below.

The development plan of the Ports Authority has been revised according to the Economic Planning Authority's data on overall economic development. The E.P.A. in coordination with the bodies concerned, also prepared general forecasts on air and sea passenger traffic.

The quantitative objectives of the transportation sector were adjusted, as far as was possible, to the forecasts of demand for transport services by other sectors of the economy.

According to these forecasts, 850,000 persons will arrive in Israel in 1971 — about 80 % by air and the remainder by sea — in comparison with 425,000 arrivals in 1966. Most of the arrivals in 1971 — some 655,000 — will be tourists.

TABLE 5. Arrivals in Israel, by Category and Mode of Entrance, 1966, 1967 and 1971 (thousand persons)

	1966			1967 (estimate)			1971 (forecast)		
	total	by sea	by air	total	by sea	by air	total	by sea	by air
All arrivals*	421.0**	118.3	267.0	415**	79	305	850	150	700
Tourists and temporary residents (excluding one-day visits by ship)	297.9**	40.5	190.7	279**	28	220	600	35	565
One-day visits by ship	37.9	37.9	–	23	23	–	55	55	–
Residents and immigrants	116.2	39.9	76.3	113	28	85	195	60	135

* Exclusive of civil permits and one-day visits by air (transit passengers).

** Including arrivals by land.

Sources: 1966, Central Bureau of Statistics.
1967, 1971, Estimates of Economic Planning Authority.

(a) Output and Exports

According to this plan, the output of transportation and communications will total some IL 2,300 million in 1971 compared with IL 1,600 million in 1967 — an average annual growth of 10 %.

Output will rise rapidly in shipping and aviation, and also in the "miscellaneous" category, which includes the additional output to be expected as the result of the new Eilat-Mediterranean Coast oil pipeline. Greater output in shipping and aviation will be due to expansion of the sea and air fleets.

Export of services by the transportation industry,[5] will reach some $230 million in 1971, compared with $119 million in 1966 and $110 million

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5) On the basis of imports FOB.

in 1967. In 1971, they will constitute 15% of all exports, and 36.5% of invisible exports. This expected expansion will be due mainly to $30 million of additional activity by Israel ships between foreign ports; and also to greater activity by El Al, mainly owing to the expected increase in tourism, which will result in an additional $45 million in exports. Income from the transmission of oil through the new pipeline from Eilat to the Mediterranean has also been taken into consideration.

TABLE 6. Composition of Gross Output* by Transportation and Communications Sector, 1966, 1967 and 1971

	1966		1967 (estimate)		1971 (forecast)		Annual growth rate	
	IL m.	%	IL m.	%	IL m.	%	1966-71	1967-71
Total	1,567	100.0	1,554	100.0	2,280	100.0	7.8	10.1
Overland transport	655	41.8	609	39.2	772	33.8	3.3	6.1
Shipping and harbors	455	29.1	451	29.0	697	30.6	8.9	11.5
Aviation and airports	180	11.5	188	12.1	335	14.7	13.2	15.5
Posts and telecommunications	247	15.7	276	17.8	396	17.4	9.9	9.4
Miscellaneous	30	1.9	30	1.9	80	3.5	21.7	26.6

* In terms of 1966 prices.

Sources: 1966, Central Bureau of Statistics.
1967, 1971, Estimates of Economic Planning Authority.

(b) Investments and Capital Stock

For the period 1968—1971, investments totalling IL 2,900 million have been planned for the transport and communications sector — a yearly average of IL 725 million. Investments in this sector will constitute some 30% — at 1966 prices — of all the investments in the economy in 1971, compared with 28% in 1966.

The gross capital stock in transportation will reach IL 6,700 million at the end of 1971, compared with IL 4,400 million at the end of 1967.[6] The sector's share will rise from 22% of the total capital stock at the end of 1967 to 24% at the end of 1971. Capital stock per person employed[7] will rise on the average by 4.6% a year, from IL 50,700 in 1966 to IL 63,600 in 1971.

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[6] After deduction of discards.

[7] Not including roads.

TABLE 7. Investment* in Transportation, by Branches, 1963-66 and 1968-71

	1963 – 1966		1968 – 1971 (forecast)	
	IL m.	%	IL m.	%
Total	2,056	100.0	2,896	100.0
Shipping and harbors	544	26.4	400	13.8
Aviation and airports	37	1.8	223	7.7
Vehicles and railways	716	34.9	830	28.7
Infrastructure	315	15.3	600	20.7
Posts and telecommunications	405	19.7	563	19.4
Miscellaneous (oil pipelines, storage, etc.)	39	1.9	280	9.7

* In terms of 1966 prices.

Sources: 1963 – 1966, Central Bureau of Statistics.
1968 – 1971, Ministry of Transport, Ministry of Posts, Economic Planning Authority.

(c) Employment and Productivity

In 1966 some 58,000 Israelis were employed in the transportation sector, about 6.6 % of those gainfully employed in the economy. By the end of 1971 this number will increase by about 15,000.[8] The sector's share of all gainfully employed will remain approximately stable, near 7 %.

It is estimated that the output per person gainfully employed[9] in this sector in 1971 will be about IL 31,000, an average annual increase of about 2.9 % from the IL 27.000 in 1966. If the recession year 1967 is taken as the base, the increase will be considerably larger, an average of 4.8 %.

Greater output per person employed is mainly the result of greater capital stock per worker, and of changes in the relative composition of the sector, with the enlargement of the capital-intensive branches like shipping and aviation. Greater productivity will also result from the renewal of buses and trucks, and from simplified procedures in the ports, due to a larger proportion of homogeneous cargoes.

3. Economic Development During 1972 – 1978

This chapter must be regarded as a general outline, and not a definite plan. At the same time it is most important to visualize in advance the future lines of development in the transportation sector, where long-term investments are required and decisions on future lines of development must, therefore, be taken now.

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[8] This estimate includes about 3,000 workers in bus and railway workshops.

[9] For this calculation 2,000 foreign employees in 1966 and about 1,500 foreign employees in 1971 have been included.

During the next decade the major development, as far as may be predicted at this time, will be in aviation and urban transportation.

During the early 1970s El Al will begin to operate giant planes, with 400 to 500 seats each; during the second half of the decade it will begin to operate a supersonic plane with a velocity of up to 2,900 km per hour, which will undoubtedly bring about a tremendous revolution in Israeli civil aviation — a revolution even greater than that brought about by the use of subsonic jet planes.

If these planes are to be handled, Lod Airport must take appropriate steps now. The development program, which has already been taken in hand, includes construction of a new runway, to be brought into operation at the beginning of the 1970s, and erection of a new terminal building, to be opened during the second half of the decade. It may be assumed that these investments will enable the airport to handle passenger air traffic to Israel until the 1990s.

In overland transportation, the major development is to be expected primarily in the urban infrastructure. The master-plans for transportation in the large cities, being prepared by the Ministry of Transport together with the municipalities concerned, proposes to offer overall solutions for the problems of transportation in each urban area, including roads entering the city, approaches to the commercial centers, and new transportation projects, such as subways. For the Tel Aviv conurbation there are also plans for the development of new traffic arteries along the Ayalon River bed. Here work will begin next year, to be concluded during the next decade.

Other branches of transportation may be expected to develop less rapidly. It is almost certain that the Israel merchant fleet will expand much less rapidly than during the period until 1971, in order to allow for its consolidation. On the basis of present information, passenger shipping is not expected to grow during the 1970s.

The major possible innovation for Israel Railways lies in the possibility of opening a rail line to Eilat; such a plan may become economically viable during the second half of the coming decade.

A considerable increase is expected in the number of vehicles on Israeli roads, especially passenger cars. Something like 600,000 vehicles may be expected on the roads by 1978, two-thirds of them passenger cars, compared with 210,000 vehicles, including 100,000 passenger cars, in 1967.

Considerable expansion is to be expected in posts and telecommunications, most of the development again taking place in the latter. Considerably increased demand for telephones is to be expected until 1978, with the greater economic activity and the rise in real income — as well as the larger population. In order to be able to meet this demand, telephone services are to be considerably expanded. Total demand for telephones is expected to reach some 750,000—800,000 lines in 1978.

B. OVERLAND TRANSPORTATION

Domestic freight in Israel is mostly hauled by trucks, which carried more than 80% of ton-kilometers in 1966. The fairly short haulage distances in Israel reduce the relative advantage of shipping by rail rather than by truck. Railways hold an advantage over trucks in the transport of homogeneous freight over long distances; this is the reason for the expected relative gain of rail freight until 1971, which will partly be the result of greater haulings of homogeneous mineral industry exports, such as potash and phosphates from the Dead Sea, and the products of the Arad chemical combine.

From 1966 until 1971 the volume of truck and rail freight is expected to increase by 45%, in terms of ton-km — i.e., by 7.7% a year: from 1,700 million ton-km in 1966 to approximately 2,500 million ton-km in 1971.

TABLE 8. Truck and Rail Freight Traffic in Israel, 1961, 1966 and Forecast for 1971

	1961		1966		1971	
	Million ton-km	%	Million ton-km	%	Million ton-km	%
Total	1,156	100.0	1,688	100.0	2,450	100.0
Railways	226	19.6	305	18.1	600	24.5
Trucks*	930	80.4	1,383	81.9	1,850	75.5

* Data refer to twelve-month periods ending June 30.

Source: Ministry of Transport.

Planned investments in trucks[10] and railways total IL 160 million for the period of the plan — including IL 100 million in trucks.

Passenger transport is carried out by various means, which are largely interchangeable: passenger cars, buses and taxicabs; to a lesser extent it is carried out by trucks and touring vehicles. The high proportion of buses among means of passenger transport, including private cars, is characteristic of Israel.

In the past the policy on means of transport restrained the growth of private cars. Until the end of the 1950s imports, especially of consumption goods, were severely restricted. Private cars, mostly imported from abroad and necessitating a large foreign currency component for their upkeep and operation, were low on the list of import priorities. Operation of private cars also constitutes an important part of the demand for urban and intra-urban transportation infrastructure, such as roads and parking facilities. Development of these infrastructure facilities demanded extensive investments, which at that time were also assigned low priority. The policy of taxing "luxury goods" made for high taxes on the purchase and operation of private cars.

Several periods can be differentiated in the development of different types of passenger transport (see Table 9). During the first period, 1951—55, the number of private passenger cars and taxicabs per capita grew more than the supply of seats on buses. During the second period, 1956—59, the growth rate of passenger cars slowed down, and the number of taxicabs per capita even declined, while the number of bus seats per capita increased more rapidly. Throughout the 1950s the number of private cars increased slowly, owing to severe import restrictions.

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[10] Of more than 2.5 tons licensed capacity.

TABLE 9. Annual Per Capita Growth of Passenger Transportation, 1951 – 1967 (percentages)

	1951 – 1955	1956 – 1959	1960 – 1964	1965 – 1967
Bus seating capacity	2.1	3.9	1.1	6.2
Passenger cars	6.1	5.7	19.3	12.7
Taxicabs	15.0	–3.5	–3.9	–

During the third period, 1960—64, import of passenger vehicles was liberalized, which resulted in a rapid increase in the number of cars per capita. The total of seats on buses rose more slowly, while the number of cabs per capita continued to decline.

From 1965 to 1967 the rate of acquisition of private cars per capita slowed down, following a rise in taxation on the purchase and operation of cars, and also as a result of the recession. The per capita supply of bus seats increased rapidly during this period, and the decline in the number of cabs per person was halted.

During the next few years the share of taxi cabs and railways in passenger transport may be expected to continue declining, with buses and private vehicles gaining. These changes will be due to the very slow increase planned in the number of taxicabs, and only slight increases in the demand for passage by train, coupled with a more rapid rise in the purchase of passenger cars (expected to be 14% annually). The bus fleet will expand at an annual rate of 3.5%.

According to the plan, the transport companies and the Government will invest about IL 190 million in public transport during 1968—1971.[11]

The following review of the history of overland transport, by types of vehicles, will be followed by the development plan for this sector.

1. Development of the Sector in the Past

From 1950 until 1966 the number of motor vehicles in Israel increased sixfold, from about 34,000 to some 200,000. The number of private passenger cars went up at a more rapid rate during the period: from 9,600 to 94,700, i.e., tenfold. Most of the increase in the number of passenger cars took place between 1959 and 1964, when the annual average increase was 24%, after administrative restrictions had been abolished and imports liberalized, while per capita income was increasing considerably. Since 1964 the growth rate has been lower, declining gradually until 1967, owing to rising purchase and maintenance costs as well as the economic slowdown.

TABLE 10. Number of Motor Vehicles, by Categories, 1950/51 – 1966/67* (thousands)

	1950/51	1955/56	1959/60	1964/65	1966/67
Total	34.1	50.8	69.6	157.3	198.1
Trucks	13.6	18.3	21.4	36.8	48.1
Buses	1.4	2.0	2.4	3.2	3.6
Taxicabs and special vehicles	1.6	3.1	3.3	3.9	4.4
Private cars	9.6	15.7	24.0	73.2	94.7
Motorcycles and motor scooters	7.9	11.7	18.5	40.2	47.3

* At end of fiscal year. Source: Central Bureau of Statistics.

[11] Exclusive of investment in railways for passenger transport.

a. Railways

The importance of this method of transportation is smaller in Israel than in other countries. Most of the Israel Railways' activity is in freight transport, and only about one-third of their revenue is derived from passenger traffic.

In 1948, it was found necessary to adapt the rail network to the needs of transportation within the borders of the newly formed State. The first passenger line activated was that between Haifa and its suburbs, in 1948. In 1953 the coastal line to Tel Aviv was inaugurated. In 1956 the line from Na'an to Beersheba was opened, and in 1965 the line from Beersheba to Dimona. At present this line is being continued towards Tzefa and Oron.

The trend to expansion was noticeable mainly until 1957; relatively large investments were made and output, in terms of ton-km and passenger-km, went up. After that year, this rapid expansion stopped. In respect of passengers traffic, this was mainly due to competition by buses. In 1966 mainline tracks totalled 464 km, with an additional 270 km of sidings, compared with 290 km of main line and 156 km of sidings in 1949. Gross investment in the railroads from 1950 to 1966 totalled IL 190 million at 1966 prices, about half of which was invested between 1952 and 1957.*

Rail freight traffic went up from about 40 million ton-km in 1949 to 331 million ton-km in 1964. After that the volume of freight declined, mostly owing to the recession in building and the conclusion of the considerable haulage of quarry materials for the building of Ashdod Port.** In 1967 the total volume handled was 305 million ton-km.

In the course of 1965—66 the railroads carried only about 4% of all passenger traffic, and their share of the industry's revenue was even lower, only about 2.3%. Passenger revenue declined from 39% of railroad revenue in 1961/62 to 32% in 1965/66.

In 1966/67 the railways produced about 358 million passenger-km, compared with 38 million passenger-km in 1949/50. Freight traffic also declined, in physical terms, since 1963. The competitive position of the railways is weak, compared with buses and taxicabs, because of, inter alia, the standard of their service and the relatively low train frequency.

Throughout its existence Israel Railways have had annual deficits, reaching IL 14.5 million in 1967, partly owing to the relatively low volume of passenger and freight traffic in relation to the total investment, and partly to low rates. Fares and rates are fixed by the Government, and in effect constitute an indirect subsidy to export industries; they also serve as a means of regulating freight and passenger transport prices.

b. Trucks

The trucking industry is the largest branch of transportation. It employs 28% of employees in transportation and communications, and provides 20% of the sector's output.

About two-thirds of all the commercial vehicles and pick-up trucks, of no more than 2.5 tons licenced capacity, are owned by industrial and service enterprises; one-third is available within the framework of the transport business. Most of the trucks with a capacity of 2.5—40 tons are operated by transport companies.

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* Sources: 1950 – 1959 – Dr. Gaathon, Bank of Israel: 1960 – 1966 – CBS.

** In 1963/64, about one-third of railway freight was consigned to Ashdod Port.

The truck industry in Israel, as in other countries, tends towards organization. Truck owners are organized locally and nationally. Present licencing policy restricts, to a certain extent, the rate of expansion of the truck fleet. Trucks are liable to be left idle during slack periods, though it is common for them to carry more than their licenced capacity.

TABLE 11. Freight Hauled by Trucks of more than 2.5 Ton Capacity, by Categories of Freight (percentages)

	1961/62	1966/67
Total	100.0	100.0
Farm produce	20.5	18.2
Quarry materials	24.2	26.6
Minerals	4.9	7.3
Industrial products	43.9	42.4
Miscellaneous	6.5	5.5

Source: Central Bureau of Statistics.

Most of the freight hauled by road consists of industrial products — some 42% of loads on trucks over 2.5 tons in 1966/67 — and minerals and quarry products — about 27%. The considerable expansion of the construction and minerals industries, and the rise in industrial output, caused a boom in trucking, which reached its peak in 1965.

TABLE 12. Trucks, by Size, 1950—1966* (in thousands)

	1950	1953	1960	1965	1966
Total	13.6	16.2	23.2	44.1	48.1
2.5 tons and less	5.6	7.5	13.7	31.4	35.4
Above 2.5 tons	8.0	8.7	9.5	12.7	12.7

* End of fiscal year.

Source: Central Bureau of Statistics.

The rapid expansion of the truck fleet took place during 1960—1966. Especially noteworthy is the increase in the number of small trucks, in response to the rising demand for their services from expanding industry and commerce.* The slower increase in the number of large trucks was a result of the expansion of the construction and minerals industries.

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* Part of this increase can be traced to the purchase of commercial vehicles for non-commercial uses, owing to changes in the relative prices of commercial vehicles and passenger cars during this period.

During this period the average size of trucks above 2.5 tons increased, reaching 8.8 tons in 1967, while the average age declined to 9.7 years. There also was a shift from gasoline to diesel trucks.

Because of the slump, which hit the trucking industry in 1966, only 84% of the trucks were actually in use, compared with 98% in 1961/62. However, a return to full employment took place by the end of 1967.

c. Buses

The bus industry in Israel is characterized by its relatively large scope, its concentration, and its cooperative organization. It has been estimated, that two-thirds of all travellers and 90% of all users of public transport travel by bus.

Two large cooperatives, Egged and Dan, account for 98% of the activity of the eight existing bus companies.* Egged alone accounts for about 80% of total output.

TABLE 13. Indicators of Bus Traffic, 1951—1966

	1951	1955	1959	1964	1966
Number of buses	1,422	1,694	2,011	2,605	2,934
Number of seats on buses (in thousands)	46.6	59.3	81.5	113.7	131.4
Average number of seats per bus	32.8	35.0	40.5	43.6	44.8
Millions of km travelled	88.0	82.0	122.8	208.1	241.4
Thousand-millions of seat-km	4,100	4,862	10,008	23,661	31,720
Km per bus (in thousands)	61.8	48.4	61.1	79.9	82.3

Source: Central Bureau of Statistics.

Bus traffic, in terms of seat-km, rose on the average by 4% a year between 1951 and 1955, and by 18—20% a year from 1956 onward. The growth rate slowed down somewhat during 1964—66, owing to the recession. Partial information indicates that occupancy increased during the early years, which caused over-crowding, but since 1956, and especially since 1960, occupancy rates and crowding have been on the decline.

From 1960 until 1966 some IL 128 million, at 1966 prices, were invested in buses; 55% of this was during 1964—66.

Bus fares were under Government control throughout the period. During 1961—1966 prices were fixed by the Tariffs Authority, a public body, on the basis of input prices increases. During this period bus fares rose by about 50%. A large part of this rise is to be explained on the basis of higher wages and fringe benefits paid to the members of the cooperatives. At present prices are fixed by direct negotiation between the companies and the Ministry of Transport.

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* Excluding those operating in East Jerusalem.

d. Private Passenger Cars

In comparison with other countries, Israel has fewer automobiles per thousand inhabitants than its per capita income would indicate.

TABLE 14. GNP per Capita and Number of Private Cars per Thousand Inhabitants in Various Countries, 1960 and 1965

Country	GNP per capita 1965	Private cars per thousand inhabitants		Average annual growth rate 1960—1965
	(dollars)	1960	1965	(percentages)
United States	3,240	333	382	2.8
Sweden	2,130	167	231	6.7
Denmark	1,740	91	156	11.4
Western Germany	1,620	83	164	14.6
France	1,620	125	197	9.5
Norway	1,620	62	125	15.1
Great Britain	1,550	111	167	8.5
Israel	1,130	12	31	19.3
Austria	1,080	59	109	13.0
Italy	960	40	106	21.5
Japan	760	..	22	..
Greece	600	5	11	17.1
Spain	580	10	25	20.1
Portugal	370	18	25	6.8

Sources: GNP per capita — World Bank Atlas, I.B.R.D. (1967).
Private cars per thousand inhabitants in 1965 — O.E.C.D. Observer No. 26 (1967).
Private cars per thousand inhabitants in 1960 — Annual Bulletin of Transport Statistics for Europe, U.N. (1965).

e. Taxi Cabs

The number of taxi cabs increased 2.2 times from 1951 until 1967. This is a much slower growth rate than that of other types of vehicles, as a result of administrative restrictions. The industry expanded mainly during the early years of the State, when buses could not meet the rising demand for transportation, and when disabled veterans were rehabilitated by the allocation of taxi licences. In 1951 there were 1,239 taxi cabs in Israel. This nearly doubled to 2,385 by 1955, and then increased to 2,493 in 1963 and 2,771 in 1967.

During most of the period the real output of taxi services did not increase. In 1965 revenue declined, apparently in consequence of a switch from "special" to "sherut" journeys (along fixed routes at fixed prices per passenger).

f. Development of Transportation Infrastructure

Infrastructure development, such as roads, bridges and parking facilities, are required for motor vehicle operation. An adequate road system is essential for the functioning of the economy; it facilitates orderly, fast and inexpensive passenger traffic and rapid, cheap and convenient movement of production factors and merchandise throughout the country. Infrastructure development also meets other needs connected with population dispersal and passenger safety.

The length and area of roads increased more slowly than the number of vehicles (see Table 10 above), which resulted in greater traffic density on some roads. The length of interurban roads totalled 2,218 km in 1951 and 3,158 km in 1966. This increase of less than 50% lags behind the almost fourfold increase in the number of vehicles per km of interurban road — from 15.4 to 60.8. The number of vehicles per sq.m. of road surface doubled: from 5.3 in 1961 to 11.9 in 1966.

At the same time it should be noted that the rise in the demand for roads, as expressed by the total number of km travelled by all cars, was more moderate, owing to the relatively larger number of vehicles covering less mileage per year, such as passenger cars and light trucks.

Road development since 1948 has been carried out in several stages, each stage differing from the previous one not only in the total length of roads, but also in their quality.

During the first years after independence the problem was how to link up the national road net, parts of which had remained outside the Armistice Lines, such as the Latrun-Jerusalem highway; the connection of new areas opened for settlement only after 1948; and the connection of new settlements to the national road net.

In the second stage, concluded in 1961, road development was slower, lagging behind the rapid rate of motorization (the number of vehicles doubled between 1956 and 1961).

During the third stage, beginning with the early 1960s, most of the national and regional road nets were reconstructed, and new roads were built, mainly in the South. Entrances to cities were widened and improved, and lanes were added to the roads connecting large urban centres. At this stage the first five-year plan for road development was carried out, the World Bank financing part of the cost.

The fourth stage, now in progress, includes the construction of expressways and the building of overpasses at major intersections, as well as the completion of reconstruction work on interurban roads.

Methods of work have also improved. During the early days new immigrants were employed at road building, mostly with manual labour; since 1955 modern methods have been introduced and wider training given in modern road planning and construction.

Between 1949 and 1967 a total of IL 705 million, in terms of 1966 prices, have been expended on road development, repair and maintenance. About half of this amount, IL 335 million, were spent during the last four years. Average annual expenditure on roads, per vehicle, was about IL 965 at the end of the first five-year period; this dropped to about IL 335 at the end of the second five years, kept at the same level at the end of the third five years, and stands at about IL 490 in 1967/68, all in terms of 1966 prices. The decline in the expenditure from the end of the first five-year period to the end of the second can be explained mainly by the fact that there was less pressure for new roads, which were essential in earlier years to connect new settlement areas and provide relief for the unemployed.

The following table presents a comparison between road conditions in 1950 and in 1965.*

TABLE 15. Length of Paved Roads, by Width, 1950 and 1965 (km)

	1950	1965
All asphalted roads	1,473	2,988
Of these:		
3 metres wide	140	429
4 metres wide	443	854
5 to 7 metres wide	890	1,604
multi-lane roads, 14—21 metres wide	—	101

Source: Public Works Department of Ministry of Labour.

In 1965 the total asphalted area was 16 million sq.m., compared with 6.6 million sq.m. in 1950.

2. DEVELOPMENT PLAN FOR OVERLAND TRANSPORTATION 1968—1971

a. Railways

The estimated increase in railway freight traffic will be from 305 million ton-km in 1966 to approximately 600 million ton-km in 1971 — i.e., approximately twofold. This increase will be due both to larger quantities handled and also to longer average hauls.

In 1967 minerals and quarry products constituted about one-half of the freight, fuel about one-sixth and grain about one-tenth. These categories of goods are expected to gain in importance by 1971, while citrus will decline, because of technical advantages involved in its transportation by truck, and also because it will become possible to bring it to Ashdod from the adjacent areas instead of the longer haul to Haifa.

In passenger transport the competitive position of railways compared with alternative means of transport will become weaker, after the Tel Aviv-Jerusalem and Tel Aviv-Haifa expressways are completed within the next few years. These roads, especially the one to Jerusalem, will shorten the trip and improve conditions for vehicular traffic, thus tending to reduce use of the railroad.

Israel Railways' revenue, including passenger transport, will go up from IL 24 million in 1966/67 and about IL 22 million in 1967/68 to about IL 32 million in 1971/72. About one-fourth of the total will be passenger revenue.

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* In those two years detailed engineering studies of the road network were prepared by the Public Works Department of the Ministry of Labour.

Between 1968 and 1971 some IL 60 million will be invested in the railways, mainly for the reconstruction of the coast line, and on the construction of new lines from Dimona to Oron and from Mamshit to Tzefa, both in the Negev. No change in the number of persons employed by the railroad, which averaged 1,650 in 1966, is anticipated.

b. Trucks

Freight carried by trucks of 2.5 tons and over is expected to increase from 1,400 million ton-km in 1966 to 1,900 ton-km in 1971. This forecast is based on a rapid increase, by about 14% a year, in the haulage of minerals, by 8% in industrial products, and by 4% in farm produce and quarry products.

The investment plans for heavy trucks include the purchase of 2,700 vehicles, at a cost of IL 100 million, in four years: 1,900 diesel-powered and the remaining 800 with gasoline engines. This plan takes into consideration the excess capacity that existed in this field at the beginning of 1967 and is calculated to increase haulage capacity in line with the expected increase in demand. The trend toward modernization will continue, and trucks over twenty years old will be taken out of use. To solve the problem of excess weight, the permitted excess above licenced capacity will gradually be reduced from 35% to 10% at the end of the period.

Some 15,000 commercial vehicles and pickup trucks will also be added, at an investment of IL 150 million, in accordance with rising demand for them, in commerce and in industry. It is estimated that by 1971 some 18,000 persons will be employed on trucks over more than 2.5 tons licenced capacity, compared with 16,500 at the end of 1966.

c. Buses

The volume of bus transportation is expected to go up at an annual rate of 3.5%, until 1971, when it will total IL 265 million, compared with IL 231 million in 1967. These figures include the Haifa subway (Carmelit).

The investment programme for this period totals IL 140 million, of which some IL 80 million have been earmarked for the renewal of buses; in order to carry out the intention of lowering the maximum age of buses to 12—13 years, some 1,300 vehicles will have to be replaced. IL 60 million are for the expansion of the bus fleet by more than 800 vehicles.

Manpower in this field is expected to increase by 2.4% a year on the average. Employment will total 11,600 in 1971, compared with 10,300 in 1966. The difference between this rate of growth and the higher one forecast for output will be the result of greater productivity.

d. Taxicabs

The Ministry of Transport raises the following objectives for its development policy for the taxi cab industry: the gradual transfer of part of the "sherut" cabs to "special" service, a modest increase in the total number of cabs, and direct efforts for the renewal of the taxi fleet. The use of taxi cabs instead of buses in urban centres causes overcrowding and slows down traffic, resulting in higher costs for the economy through excessive vehicle wear and tear, greater fuel consumption, and greater investments in infrastructure development. These considerations have outweighed the idea of permitting free competition between different means of transport and seeking an adequate substitute for private cars.

The distance travelled by taxi cabs will increase from 215 million km in 1966 to 236 million km in 1971/72. "Sherut" cabs will decline from 62.5% of this total distance in 1965/66 to 55% in 1971/72.

IL 20—21 million will be invested in taxi cabs during 1968—1971, and their number will increase to 2,950 at the end of the period. The Ministry of Transport encourages a changeover to diesel engines, for which operating costs are lower, and customs rates on such cabs have been reduced with this purpose in mind.

In 1966 about 5,100 persons were employed in this field. By 1971 it will increase to 5,500, including drivers of touring cars and employees of self-drive agencies.

e. Touring and Self-drive Cars

The introduction of touring cars dates back only to 1960, and that of self-drive rentals to 1961. At the end of 1966, some 27 companies were active in the field of car rentals, with a total of 950 vehicles, and there were eleven companies running touring cars, with about 150 vehicles.

Both fields may be expected to develop in the future, in the light of the expected increase in tourism in Israel. The number of passenger-km in touring cars is likely to go up from 19 million in 1966/67 to 31.5 million in 1971/72; for rental cars the expected increase may be from 150 to 210 million passenger-km. Investments during the duration of the plan are expected to total IL 29 million.

f. Development of Transportation Infrastructure

To a large extent the plan for the development of interurban roads is based on the survey of interurban traffic, prepared in 1965 by a French team. Recent changes and new forecasts concerning traffic on Israeli roads have been taken into consideration.

The number of private cars in Israel is expected to grow by an average of 14% a year. This forecast is based on the expected rise in income, and on present price levels for vehicle purchase, maintenance and operation.

The plans for investment in interurban roads are mostly based upon international design criteria of their carrying capacity, taking into consideration local peak traffic figures and the share of trucks in total traffic. By 1971 the total number of motor vehicles is expected to stand at 315,000, including 170,000 passenger cars. In view of this expected increase in the number of vehicles, investments in infrastructure development become necessary not merely to improve traffic conditions, but to prevent their worsening. Investments during 1968—71 will total about IL 600 million.

Interurban road development during 1968—71 will include construction of expressways and overpasses at road intersections, and completion of the reconstruction of the interurban road network. Special emphasis will be placed upon the solution of transportation problems in the major urban centres, and also in smaller towns, where traffic density is expected to exceed the capacity of the roads.

TABLE 16. Infrastructure Development in Transportation, 1968—71*

	Total 1968—71	1968	1969	1970	1971
Total infrastructure investment	600	130	142	157	171
Interurban roads and special projects	440	90	102	117	131
Urban roads and central bus stations	160	40	40	40	40

* Fiscal years.

The plan prepared by the Public Works Department includes the construction of the following segments of interurban roads: Hadera—Haifa (40 km), Tel Aviv—Ashdod (27.7 km), Ganot—Lod—Ramla (14 km), Ramla—Shaar Hagai (four-lane, 20 km), Haifa — Emek crossroads (four-lane, 9 km), Tel Aviv—Petah Tikva (11 km) and Tel Aviv—Herzlia (7 km). Other new roads will be built in the sections Tel Shoket—Lahav—Bet Kama (22 km), Arad—Tzefa—Dimona (22 km), Hatzav—Netiva (7 km), Hadera diversion (5.5 km). New construction will add up to 190 km. In addition roads in all parts of the country, totalling 600 km, will be repaired, widened and improved.

In addition the Ayalon River bed will be utilized for the construction of expressways from north to south through Tel Aviv. Economically this plan is more advantageous than the widening of existing alternate routes, which would demand greater investments. The first stage of the work will be carried out during 1968—71; IL 32 million will be invested, in addition to IL 8 million for the acquisition of the right of way. The timing and extent of the investment in Stage Two of this project will be decided according to future traffic developments in the area.

Other transportation projects include the improvement of city approaches, parking facilities, subterranean and elevated passages, etc.

Investment by municipalities in urban roads will average IL 30 million a year. A further IL 40 million will be invested during the period in central bus stations, not including commercial development connected with them.

C. AVIATION

International aviation, except for some airlines in the Eastern Bloc, is organized in two world bodies: International Civil Aviation Organization and International Air Transport Association. I. C. A. O. is an organization of governments which maintain aviation services to aviation companies, and it deals with questions of international air space, international standards of safety and the like. I. A. T. A. is an organization which encompasses most of the world's aviation companies, and it deals with the commercial, economic, technical, financial and legal aspects of civil aviation; it also fixes passenger fares and cargo rates and the conditions of sale of airline services. The Association is based on the equality of rights of its members.

International air transport is subject to arrangements under an international convention. Commercial landings or flights over a State's territory are not permitted anywhere without the prior express permission of the State concerned. The latter grant each other aviation rights on the basis of mutual aviation agreements. Aviation rights are of five kinds: overflight without landing; technical landing; passenger, cargo and mail transport — from the State; to the State; and in transit.

A national company's possibilities of maneuver on routes to and from its home country and on international routes, as well as its share in the total traffic, are limited by intercountry and intercompany agreements on aviation rights, just as the rate system and conditions of sale of services are determined by I. A. T. A.

A distinction is usually drawn in aviation between commercial scheduled flights and non-scheduled flights. The former include ordinary flights on regular routes at regular times, whereas the latter include charter and other non-regular flights. A charter flight is one in which the operator charters the entire capacity of the plane. In recent years, charter flights have developed rapidly, the main source in and around Europe being Northern European countries and the main destination the Mediterranean Basin. This development is partly connected with the rise of a certain type of tourism, namely, inclusive tours.

International aviation is characterized by rapid technological change, reflected by the rise in transport capacity and speed of flight. The operational cost per unit of utilized capacity in the larger jet aircraft to be put into operation in the next few years will be low, but the capital cost per unit of capacity will be high.

As a result of technological changes and the rise in the aggregate amount of traffic, the average operational costs per unit of capacity dropped in the past. The continuation of this trend is forecast, at an annual rate of 2%. Flight fares, fixed by international agreements, have also tended to decline. A drop of 1% per annum is forecast in the average fare per passenger-km. (See Table 17). An annual increase of 12% is anticipated in total world passenger traffic. The average utilization rate in international aviation, which is 55% at present, will probably fall somewhat as larger aircraft come into operation.

TABLE 17. Costs and fares in international flight passenger transport: 1965, 1970, 1975

Year	Average operational cost per utilized unit (cent[1]) per seat-km)	Fare per utilized unit (cent[1] per seat-km)	Break-even Point of utilization (%)	Actual rate of utilization (%)
1965	1.9	3.8	52.0	55.0
1970	1.7	3.5	50.0	52.0
1975	1.5	3.3	47.0	52.0

1) cent = $ U.S. 0.01

Source: I.C.A.O. Statistics Section, December 1965

In the 1970's there will be two main types of aircraft in international aviation: Giant (Jumbo) Jets and Supersonic Jets.

Jumbo Jets will contain between 400 and 500 seats and will fly at 950 km per hour. The production of 3 types of supersonic planes is planned: Concorde (British-French), Boeing 2707 (American) and Topolov 144 (Russian), whose speeds will range from 2,350 to 2,900 km per hour and whose seating capacity will range between 120 and 300. The first Concorde supersonic passenger airliner is anticipated to be in commercial service in 1971 or 1972 when it will be introduced on the transatlantic route.

The advantage of the Jumbo Jet is its low operational cost per unit utilized. The advantage of the supersonic plane lies in its much greater speed. It is doubtful whether uniform prices can be preserved for all types of planes and therefore, differential fares are likely to be introduced according to the type of plane.

1. The Development of International Aviation in Israel

The total passenger movement to and from Israel grew from approximately 290,000 in 1950 to approximately 990,000 in 1966. Air passenger traffic grew from 128,000 in 1950 to 654,000 in 1966. The share of air traffic in total traffic to and from Israel rose from 40% in 1950 to 66% in 1966.

Tourism represents over 70% of air traffic to and from Israel, excluding transit passengers. This is an outstanding feature throughout the entire period except for the first years after the establishment of the State, when tourist traffic was limited and the weight of immigration was higher.

TABLE 18. Arrivals and departures of air passengers in Israel by category of visa: 1950—1966 (selected years)

	1950		1951		1955		1960		1965		1966	
	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent
Total	128	100.0	190	100.0	81	100.0	238	100.0	555	100.0	654	100.0
Tourists	62	48.4	41	21.6	52	64.2	151	63.5	351	63.2	412	63.1
Temporary residents							4	1.7	11	2.0	12	1.8
Residents			24	12.6	26	32.1	59	24.8	115	20.7	149	22.8
Immigrants	55	43.0	101	53.2	2	2.5	12	5.0	10	1.8	7	1.0
One-day visitors*	11	8.6	24	12.6	1	1.2	12	5.0	68	12.3	74	11.3

* In transit (arrivals and departures)

Source: Central Bureau of Statistics

a. Development of El Al

El Al Israel Airlines Ltd. is the only National company which bears the Israeli flag on international air routes. The company was founded immediately following the establishment of the State and the majority of its shares are held by the Government of Israel. In August 1949, El Al began to operate regular flights to Paris and Rome in one plane — a Skymaster. It has continuously expanded the number of its flights and the routes on which it operates, and it has repeatedly expanded and replaced its equipment, from the "Commando" through the Constellation and the Britannia up to the Boeing jets.

In addition to routes to and from Israel, El Al is also active on the North-Atlantic route. The number of the Company's passengers rose from some 15,000 in 1950 to 37,000 in 1955, 117,000 in 1960, 306,000 in 1965 and some 414,000 in 1967*. The share of El Al in air traffic to and from Israel has varied around 50% over the past decade, ranging from a low of about 44% in 1958 to a high of about 58% in 1962. It was 51.5% in 1967.

The share of El Al in the traffic in its various routes depends, among other factors, on Israel's network of aviation agreements with other countries, and the aviation rights granted to it under these agreements. The share of El Al in its main direct routes to and from Israel ranges from 40% to 100% of total traffic. On the North-Atlantic route, El Al's share in the total traffic has gradually edged up from 0.9% in 1957 to 2.6% in 1965/66. On through-traffic between New York and Israel, El Al's share is much higher.

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* Includes non-revenue passengers (Source: till 1966: Central Bureau of Statistics; 1967: Ministry of Transport).

Changes have taken place during the period in the Government's policy towards charter flights. Until 1960, charter flights were operated without any special restrictions. Thereafter, they were permitted only if certain conditions were fulfilled in regard to prices, operators, categories of passengers and the place of departure and destination. During 1960—62, El Al operated some two-thirds of all charter flights which landed in Israel.

The considerable expansion in the number of charter flights until 1963 (in 1962, approximately one-third of the tourists who arrived by air came with these flights) limited the possiblities of developing traffic on scheduled flights. Therefore, in April 1963, when authorization of I.A.T.A. was received for introducing cheap rates for group flights, Israel forbade charter flights to its territory from North America and Europe. Charter flights from other parts of the world and of pilgrims from Europe were not banned. *

In autumn 1967, the Government decided to extend the permission for charter flights to include students and all passengers from Scandinavia. The Government's policy towards charter flights will be reexamined in 1970.

TABLE 19. Operating results of El Al aircraft: 1950—1966 (selected years)

	1950	1952	1954	1956	1958	1960	1962	1964	1966
Revenue passenger-km (millions)	50	98	126	135	258	413	827	1,011	1,404
Revenue ton-km (millions)	6	13	15	16	29	47	93	115	161

Source: Central Bureau of Statistics

The number of passengers carried by El Al increased 28-fold from 1950 to 1966 and 10-fold from 1956. This contributed to and resulted from the great increase which took place in total passenger traffic to and from Israel and the increased share of El Al in the transatlantic traffic.

The rise in the transport capacity and output of El Al is a consequence of the company's policy to purchase modern aircraft with a much better operational performance (from the point of view of speed and capacity) and the high utilization in terms of flight hours and load factor. The rate of seat-capacity utilization fluctuated between 54% and 65% in the past decade and is considered above average among international aviation companies. The number of hours flown by the aircraft per year is also higher than the world average, despite Israel restriction on flying on Sabbaths and holidays.

During 1950—67, IL 229 million (at 1966 prices) were invested** in aircraft. The main net expenditures were made during 1957—62 when approximately IL 148 million were invested, as compared with about IL 48 million during 1950—56 and about IL 33 million during 1963—67. † Today, the company possesses seven Boeing jet planes (two 707/320's, two 720's and three 707/420's).

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* A tourist is defined as a pilgrim when most of his stay in the country is spent in the Christian Holy Places.

** After deducting income from sale of aircraft.

† Source of data: Dr. A.L. Gaathon, Bank of Israel and the Central Bureau of Statistics.

A salient feature of El Al's freight operation typical of cargo transport in international aviation in recent years is the drop in costs and income per ton-km.

TABLE 20. Income and expenditure per ton-km in El Al passenger and freight operations*, 1958/59—1965/66 (U. S. cents)

	1958/59	1960/61	1962/63	1964/65	1965/66
Cost per ton-km	63.0	49.6	40.6	35.9	32.8
Income per ton-km	57.2	51.2	39.6	36.1	33.2

Source: Ministry of Transport

* Based on a weighting formula used by El Al.

The total revenue of El Al amounted to some IL 155 million in 1966/67 and income in foreign currency* rose from $ 14 million in 1959 to $ 34 million in 1966.

b. International Airports

Lod Airport is so far Israel's only international airport and therefore serves as the center for all international air passenger services, freight and mail dispatch as well as services to Israeli and foreign planes. The airport administration sells these services to its clients either directly or through sub-contractors who have received a concession from the airport management against payment.

Lod Airport was constructed by the British Mandatory authorities in 1936. With the establishment of the State it became the property of the Government of Israel. In the course of time, traffic increased considerably, as is shown by Table 21. From 1964, the number of departing air passengers exceeded by far those arriving since a rising proportion entered by land via the Mandelbaum Gate, and then departed by air.

TABLE 21. International aircraft, freight and mail traffic, Lod Airport 1949—66 (Selected years)

	1949	1950	1955	1960	1965	1966
Number aircraft landing	2,205	2,272	1,373	2,926	4,765	4,904
Freight (excluding mail) —tons						
Unloaded	293	1,410	699	1,486	4,248	4,320
Loaded	166	536	515	2,030	5,423	7,156
Mail, arrived and dispatched (tons)	130	241	263	522	1,075	1,159

Source: Central Bureau of Statistics

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* The Company's transactions registered as exports are only those that are included in Israel's balance of payments.

Following the rapid development of international aviation, both with regard to the number of aircraft and their quality, it was necessary to adjust the conditions at Lod to the changing circumstances. Substantial sums were invested in the construction and renewal of runways, in systems of navigation and air control, in equipment and buildings. The total investment in airfields in Israel between 1955 and 1967 reached some IL 47 million, at 1966 prices, of which 96% was invested in Lod. Over two thirds of the sum, IL 32.7 million, was spent between 1959 and 1964, and IL 12 million in 1965—67.

The Atarot Airfield (near Jerusalem) can handle about 100,000 passengers a year, but it is limited to medium-range aircraft (such as the Caravelle) which usually fly on regional routes. At present, there are no plans for enlarging it to provide services for bigger aircraft.

2. Development Plans 1968 — 1971

Aviation policy in Israel is of consequence both to the national carrier and the tourist industry. Whilst from the latter's point of view the most desirable policy is one of low fares which will attract more tourists and thus lead to a greater income in foreign currency, reduced fares could jeopardize the profitability of the company.

Mutual interests exist between Israel's national carrier and the promotion of tourism to Israel since the strength of the company depends on the volume of air-tourism to Israel. The company's extensive publicity campaign in various countries, the high frequency of flights on regular routes and the efficiency of its operations all combine to encourage tourism and increase air traffic to Israel. Moreover, in times of emergency, El Al serves as a vital transport facility for the State.

The development plan assumes that the aviation policy decided upon in 1967 will remain unchanged during the period of the plan and that the close cooperation between the tourist and aviation industries will continue with regard to increased publicity and improvement of sales methods. Forecasted changes in prices were also taken into account as detailed below.

a. Traffic Projection

Projections of air traffic to and from Israel were based on separate analyses of each of the main individual components: tourists, residents and immigrants. The predicted rate of increase in air tourist traffic between 1966 and 1971 is some 22% per annum on the average. An average annual rise of some 11% is expected in the travel of residents during the same period.

The above forecast assumes that the share of El Al in air traffic to and from Israel (excluding charter flights) will continue to be approximately 52%.

As regards average fares, a reduction was assumed which would be greater on transatlantic routes (about 3% per annum on the average) and less on European routes (about 1.7% per annum on the average). As regards freight rates, an annual average reduction of 5% was assumed.

TABLE 22. International air passenger* and freight traffic to and from Israel, total and by El Al 1966, 1968 and 1971

	1966	1968	1971
Total			
Passengers (thousands)	580	875	1,400
Freight (thousands of tons)	13	16	25
El Al			
Passengers (thousands)	290	415	640
Freight (thousands of tons)	8	11	17

* Excluding transit passengers

Source: Economic Planning Authority

According to the plan, the industry's revenue will increase from IL 176 million in 1967 to about IL 330 million in 1971 — an average annual rise of about 17%.

The sector's exports* increased from $ 17 million in 1960 to $ 34 million in 1966. By 1971, exports are expected to rise to about $ 77 million (an average annual rise of 18%). The main part of the exports* — some 90% consists of the sale of aviation services to passengers.

The added value in El Al's output ranged between 20% and 25% during recent years.

b. Investment and Manpower

According to the projection, El Al's fleet of aircraft in 1971 will consist of ten Boeing jets, one of which will contain about 400 seats. The planes to be purchased are two Boeing 703/320's (one in 1968 and one in 1969), and one Boeing 747 (in 1971). The total investment in aircraft** will amount to approximately IL 130 million between 1968/69 and 1971/72, of which some IL 50 million will be spent on the two Boeing 707/320's and some IL 80 million on the Boeing 747. The investment will be financed mainly by supplier credit and partly by expanding share capital and by loans from the Israeli Government. Besides, some IL 45 million will be invested during the period in ground installations at Lod Airport and in equipment for services to aircraft.

The number of El Al's employees in Israel and abroad is expected to rise from 2,600 in 1966 to about 3,500 in 1971 (of whom 500 will be foreign employees). This rate of increase is slower than in the past due to plans for standardizing equipment and of large-scale economies that can be achieved in different departments.

The training programs for the company's air crews in the coming years are aimed at meeting fully the company's needs in crew manpower, in line with the purchasing of equipment.

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* Not including export of Lod Airport services.

** Including spare parts and reserve engines, at 1966 prices.

c. Airport Development

In their present state, the Lod Airport and terminal are incapable of meeting the predicted demand of the next decade. The number of air passengers entering and leaving Israel in 1971 will be about 1.4 million as compared with about 580,000 in 1966 — in other words, almost 2.5 times as much.

The development plan of Lod airport is aimed at increasing its capacity and improving the quality of its service. The plan is based on a forecast of demand for the airport's services, as well as the special technical requirements involved in the use of the new aircraft to be put into operation in the 1970's.

The development plan is based on the construction of a new 12,000 feet main runway, which will make it possible for heavy and supersonic aircraft to land and will divert landing and take-off in the direction of less populated areas in order to reduce the amount of disturbance caused by the planes' noises. A new terminal will be built south of the existing runway. The runway will be completed in 1971 and the new terminal area in 1975. The total investment in the development of the airport is estimated at about IL 100 million (at 1966 prices), of which about IL 51 million will be spent by 1971/72 (see Table 23) and the rest by 1957/76.*

TABLE 23. Lod Airport Investment Plan; 1968—71*
(IL millions at 1966 prices)

	1968—71	1968	1969	1970	1971
Total	51.3	10.1	13.0	17.7	10.5
Buildings	49.4	9.9	12.5	17.0	10.0
Equipment	1.9	0.2	0.5	0.7	0.5

* Data refer to budget years.

Source: Ministry of Transport

The rapid rate of growth of air traffic may necessitate the acceleration of the development plan for Lod Airport so that it can meet the new conditions.

The main revenue of Lod Airport comes from the provision of services to aircraft. During 1962/63—1966/67, these services accounted for 82% of the total revenue. The balance came from passenger, freight and other services. The total revenue of Lod Airport, at current prices, rose from IL 4 million in 1962/63 to IL 11.5 million in 1966/67 and, according to the forecast will amount to IL 18—19 million in 1971 at 1966 prices.

d. Post-1972 Development

During 1972—1978, the number of air passengers to and from Israel is expected to increase at an annual average rate of about 10%. At the same time, El Al will enter the supersonic era and the operation of giant planes will expand. About 1976, El Al is expected to begin the operation of supersonic Boeing 2707's and as a result, the number of 707/720 jet aircraft will decrease late in the decade.

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* An express road from Tel Aviv to Lod Airport will also be built and will considerably reduce the length of the journey to and from the airport.

3. Inland Aviation — Development and Forecast

Inland aviation consists of two main spheres of activity: passenger transport and agricultural aviation.

a. Passenger Branch

Internal passenger transport is carried by Arkia Co., which operates flights mainly on domestic routes. Arkia was founded in December 1950. In 1963 its fleet of aircraft consisted of 5 Dakotas; at the end of 1967 it consisted of 3 Heralds and 2 Dakotas.

Its main traffic has been on the Tel Aviv-Eilat route, which accounted for 85% of passengers. The unification of Jerusalem and the integration of Atarot airfield into the network of inland airfields enable the development of new domestic routes to Jerusalem from all parts of the country.

During 1962—66, Arkia operations increased from approximately 30 million passenger-km to approximately 49 million passenger-km. The company's income rose from IL 3.1 million to IL 5.6 million (at current prices).

According to the plan, revenues will rise to IL 10 million in 1971 at 1966 prices. The average annual rate of increase will be about 13%. In view of the predicted rise in the number of passengers resulting from the anticipated rise in tourism, two additional Heralds will be purchased at an investment of about IL 8 million. (The first one is expected to enter service in April 1968).

b. Agricultural Aviation

Two companies operate at present in this sphere: Chim-Avir (which accounts for some two-thirds of total activity) and Merom. The companies possess about 35 planes which are employed in spraying.

Today, the companies are capable of meeting the entire present and predicted demand of agriculture for spraying services. The further development of the companies is dependent on finding new fields of activity (such as aerial photography) or the export of their services.

c. Inland Airfields

The development of inland airfields took place at a slow pace (during the last eight years, only IL 1.5 million was invested in them). The present development plan for these airfields proposes investing some

IL 5.5 million during 1968—71. The plan includes the transfer of Sdeh Dov to Lod and the development of the Eilat, Haifa and Herzlia airfields (the latter serves as the central airfield for spraying operations).

As stated, the Atarot airfield represents a considerable addition to the network of Israel's inland airfields and will facilitate direct air connection with Jerusalem which was impossible before June 1967.

D. SHIPPING AND PORTS

In shipping, distinction is commonly made between freighters carrying dry goods (bulk, refrigeration and general cargo vessels); tankers carrying fuel and other liquid cargo; passenger ships; and mixed freight and passenger ships. A further common distinction is made between ships sailing on regular predetermined routes with a fixed schedule published in advance and ships carrying freight to various destinations according to order. The first category, called liners, is generally affiliated with "conferences" in which most of the companies serving a given line are organized. These conferences fix price rates, divide up the market, and decide on a common policy vis-à-vis non-conference members. There are innumerable such "conferences" all over the world, many of which are bound by mutual agreements fixing uniform price rates and restricting the admission of new members.

Ocean shipping is subject to considerable fluctuations because of a great many international developments. Thus, the Korean War in the early fifties, the Suez crisis in 1956, the Viet Nam War in recent years, and the 1967 closing of the Suez Canal all led to booms in the shipping industry.

Technological improvements, especially in speed, size, and loading and unloading, have increased marine freight productivity. Competition of the airlines for passenger transport is steadily growing. Air rates have declined and the speed of air travel has increased. As a result, marine passenger traffic has dropped sharply as a share of total passenger traffic. Ships tend to concentrate on cruises for the high-income class on the one hand and low-fare sea-travel for the low income groups.

1. Development of Shipping in Israel, 1949–66

Two major companies, Zim and El Yam, control 90% of the general capacity of Israel's ship facilities. In addition there are several smaller firms.

In 1947, even before the State of Israel was established, Zim registered its first passenger ship. In 1948 it acquired two additional passenger ships used mainly for transporting immigrants during the period of mass immigration. In 1949 Zim bought a number of old freighters and opened its first line to northwest Europe. The three main reasons for developing merchant marine were: 1) to secure the seaborne traffic of freight and passengers to and from Israel at all times, should foreign carriers refrain from carrying goods and passengers to Israel for political or security reasons; 2) to enable Israel's foreign trade to develop without dependence on foreign parties who might be interested in interfering with its development; and 3) to foster the country's economic growth and improve its balance of payments by enhancing its foreign currency earning capacity.

Without overland trade connections, Israel is dependent for its external supplies on marine transport. During the first few years, the prospects of regular trade at Israeli ports were doubtful because of the activities of certain conferences which raised their tariffs on the Israeli route. Some shipping lines avoided landing at Israeli ports for fear of the Arab boycott.

Difficulties were also encountered in routing Israeli ships where it would be most efficient to serve her regular trade.

Israel's economic development, her rising share in marine trade, and the admittance of Israeli shipping companies to conferences all served to reduce Israel's dependence on foreign interests. All grain imports are carried by Israeli ships. Lines were opened to the South and to the East, although the Suez Canal remained closed to Israeli vessels. The dependence on foreign oil tankers was reduced. The merchant marine helped develop exports of various products with a high transport component, such as minerals and cement.

Under the reparations agreement with Germany, considerable amounts were invested in Israel's expanding merchant marine. Especially during the 60's, Israel's ships increased their share in international trade, operating between foreign ports not connected with the traffic of goods to and from Israel. The total export of shipping services constituted 22.6% of Israel's invisible exports by 1966.

(a) Freight

Total marine cargo to and from Israel grew from 1.6 million tons in 1950 to 4.6 million tons by 1966. Outgoing cargo multiplied 10 times, mainly because of increased citrus and mineral exports, while the incoming cargo increased only by 80%.

The transport of goods into and out of Israel's ports by ships sailing under the Israeli flag increased sixfold from 327,000 tons in 1951 to 1,979,000 tons in 1966. In the latter year they accounted for nearly 43% of the total traffic as against only 18% in 1951. For imports alone, the increase was even more marked, rising from 300,000 tons in 1951 (or 19% of the total import) to 1,487,000 tons in 1966, or 57%. In exports the share of ships sailing under the Israeli flag advanced from 27,000 tons (or 12% of total export) in 1951, to 492,000 tons, or 24%, in 1966. Israeli ships carry a larger share of the import cargo since it is usually the importer who designates the carrier.

TABLE 28. Dry-cargo Traffic to and from Israel in Selected Years, 1950—1966 (in thousand tons)

	1950	1952	1955	1960	1965	1966
Total	1,648	1,352	2,164	3,214	4,309	4,639
Imports	1,435	1,122	1,538	2,035	2,473	2,610
Exports	213	230	626	1,179	1,836	2,029

Source: Israel Ports Authority

Apart from ships sailing under the Israeli flag, the Israeli shipping companies also operate ships sailing under various foreign flags, either as charterers or as owners. If the cargoes carried in Israeli chartered ships are included, 63% of Israel's imports and 34% of her exports were carried by the Israeli merchant marine in 1966.

TABLE 29. Share of Cargo to and from Israel Carried by Ships Operated by Israeli Companies,* in Selected Years, 1958—1966 (percent)

Year	Total		Imports		Exports	
	Israeli-owned and chartered ships	Israeli flag	Israeli-owned and chartered ships	Israeli flag	Israeli-owned and chartered ships	Israeli flag
1958	43.4	29.2	44.4	30.9	41.1	25.6
1960	45.9	38.5	48.4	44.3	41.6	28.6
1962	56.4	45.7	60.1	51.0	48.5	34.2
1965	48.9	40.9	57.2	51.1	38.6	27.3
1966	49.7	42.7	63.0	57.0	34.4	24.3

* Ships chartered by Zim exclusively.
Source: The Bank of Israel.

In addition, as stated, the Israeli merchant marine also engages in cross trade between foreign ports. Here the cargo carried — other than oil — increased from 1958 to 1965 from 816,000 to 1,715,000 tons, averaging 45% of all cargo carried by Israeli operated ships.

(b) Passengers

Considerable fluctuations have taken place in passenger transport to Israel. In the early 50's traffic declined with the waning of immigration. Then, until 1963, traffic again increased. Thereafter, it remained fairly stable or decreased slightly, except for one-day visitors.

TABLE 30. Ship Passenger Traffic to and from Israel* in Selected Years, 1950—1966 (in thousands)

	1950	1952	1955	1960	1963	1966
Total	157	65	100	128	204	167
Immigrants	114	20	35	12	37	6
Residents	43	22	35	55	87	70
Tourists		23	30	61	80	91

* Not including one-day visitors by sea.
Source: The Central Bureau of Statistics.

During the period of mass immigration most arrivals by sea were immigrants. More recently, the majority of arrivals by ship are tourists, and include one-day visitors whose number grew from 5,000 in 1952 to 77,000 in 1966. Initially, Israeli ships carried an increasing portion of the passenger traffic — other than one-day visitors — which went up to 70% in 1958 but fell off subsequently and stabilized round 40%. In 1956 there were four passenger boats with a total gross registered tonnage of 34,000 tons sailing under the Israeli flag and in 1965 there were eight (including mixed passenger-cargo boats) with a total gross tonnage of 87,000. In 1966 the tonnage went down to 67,000 when the passenger fleet was reduced by the sale of a number of obsolete ships and, later, of the ferries which had been plying the Mediterranean. Finally, in 1967 the biggest passenger ship, the Shalom, was also sold.

(c) Output and exports

The total revenue of the shipping industry rose by almost two-thirds during the period under review, totalling IL 367 million in 1966.

TABLE 31. Revenues of the Israel Merchant Marine by Type of Service, 1963–1966 (in IL million at current prices and in percent)

	1963		1966	
	IL million	%	IL million	%
Total	263.5	100.0	366.7	100.0
1. Freight	185.2	70.3	277.1	75.6
imports	84.9	32.2	122.5	33.4
exports	22.1	8.4	37.1	10.1
cross trade between foreign ports	78.2	29.7	117.5	32.1
2. Passengers	78.3	29.7	89.6	24.4

Source: The Central Bureau of Statistics.

TABLE 32. Export of Shipping Services, by Type, in Selected Years, 1960–1966 (in $ million)

	1960	1962	1964	1965	1966
Total	31.2	51.7	56.6	72.6	78.1
Cargo freight from Israel	5.4	7.4	7.1	14.0	12.2
Cross trade between foreign ports	9.5	18.0	28.8	33.9	40.8
Passenger operations	6.8	9.2	11.1	12.7	11.1
Leasing of ships	2.1	4.5	3.1	7.1	7.2
Other exports (including port services)	7.4	12.6	6.5	5.9	6.8
(Revenues from cargo freight to Israel)	(20.8)	(28.3)	(33.8)	(34.8)	(38.6)

Source: The Central Bureau of Statistics, Balance of Payments Section.

The exports of the merchant marine, as included in Israel's balance of payments computations, increased from $26 million in 1959 to $78 million in 1966. The added value* varied from 10% to over 20% according to international changes in freight rates and passenger fares.

In calculating the net foreign currency contribution to the balance of payments, account must be taken of the fact that since 1961 when German reparations payments came to an end, purchases of ships were mostly financed out of foreign currency loans, and that part of the crews are foreign nationals who receive their pay in foreign currency.

(d) Capacity and investments

The number of ships sailing under the Israeli flag went up from 20 at the end of 1950 to 91 at the end of 1966. The total gross registered tonnage rose from 75,000 to about 650,000 tons. Most of the increase took place between 1960 and 1966. The dead-weight tonnage, which is a more useful index than the number of ships or even the total gross registered tonnage, rose by a factor of 2.4 from 1960 to 1966. Particularly rapid was the increase in the capacity of bulk carriers.

TABLE 33. Dead-weight Tonnage of Israel's Cargo Ships, by Type, 1960—1966 (in thousand tons)

	1960	1966
Total dead-weight tonnage	490	1,170
General cargo ships (including reefers)	195	396
Bulk carriers	106	433
Tankers	189	341

Source: The Bank of Israel.

The average age of the ships in Israel's merchant marine declined considerably. Whereas in 1956, ships that were over 10 years old accounted for about 45% of the dead-weight tonnage, there were no longer any ships of this age at the end of 1967.

With the aid of German reparations, 49 ships were bought, with a total dead-weight of 450,000 tons. Close to 40% of the total merchant marine tonnage was thus acquired, with about 16% of the German reparations being invested in the development of the merchant marine.**

Total investments† less the sale of ships amounted to about IL 930 million in 1950—1967 (at 1966 prices); about half of these investments were made in the years 1960 through 1964.

(e) Harbors

Israel has two active harbors in the Mediterranean — Haifa and Ashdod — and one in the Red Sea — Eilat. The harbors of Tel Aviv and Yafo which are shallow and were used mainly for lighterage, were closed at the beginning of 1966 when Ashdod harbor came into use. Haifa port, which was opened in 1933 is Israel's largest. Since 1957 Kishon Port in Haifa Bay has been operated as an auxiliary in conjunction with Haifa. About 80% of all cargoes in 1965—66 went through Haifa Port, and about 10% through Ashdod, which has been operating since the end of 1965. The new port of Eilat has been in use since the end of 1964 and is used for marine trade with East Africa and Asia.

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* Source: A study carried out for the Ministry of Transport.

** Reparations and Their Effect on Israel's Economy, The Bank of Israel, 1965.

† Source: Dr. A. L. Gaathon, Bank of Israel; The Central Bureau of Statistics.

Since 1948 the activity of Israel's ports has increased considerably, mainly as regards cargo traffic which, as stated, went up from 1.3 million tons in 1949 to 4.6 million tons by 1966, or 7.8% per year.

TABLE 34. Cargo Traffic* in Israeli Ports, in Selected Years, 1951—1966
(in thousand tons)

	1951	1955	1959	1964	1965	1966
Total	1,807	2,164	3,003	3,856	4,309	4,639
Haifa	1,513	1,754	2,452	3,266	3,740	3,915
Tel Aviv	177	203	218	219	137	—
Yafo	117	207	198	170	123	—
Ashdod	—	—	—	—	23	526
Eilat	—	—	135	201	286	198

* Other than oil.

Source: The Central Bureau of Statistics.

Most of the income of the ports is derived from cargo handling; the balance comes from passenger and ship handling services. The total revenues of Israel's ports amounted to about IL 88 million in fiscal year 1966/67.

During the years 1952—1967 nearly IL 300 million were invested in marine harbors, especially in the construction of Ashdod harbor in 1961—1965 and the New Eilat Port in 1962—1964. In 1964—1965 alone the investment amounted to IL 127 million at 1966 prices.*

2. Development Plan, 1968—1971

(a) Shipping — freight, passengers, investments, output and exports

During the four years 1968—71, it is expected that the tonnage of export cargoes will continue to rise rapidly with a more modest increase in the volume of import goods. Export cargoes are expected to more than double, from 2,031,000 tons in 1966 to 4,170,000 tons in 1971. As in the past, the main increase will be in minerals (potash and phosphates) and citrus fruit. The volume of imports is not expected to grow so fast because grain imports will remain about the same as in 1966, which was a record year in this respect.

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* The data for 1950—1959 were received from Dr. A. L. Gaathon, the Bank of Israel, and for 1960—1967 from the Central Bureau of Statistics.

Israel's merchant marine, including its chartered vessels, is expected to carry almost half of the approximately 7,170,000 tons of import and export shipments passing through the local ports in 1971.

Part of the projected expansion of the merchant marine is designed for cross trade between foreign ports which is expected to account for an increasing share of the cargo carried.

Sea passenger traffic is expected to grow only slightly, from 240,000 in 1966 to 280,000 by 1971. As several passenger ships have been sold, Israel's share in this passenger traffic is expected to continue on the downtrend.

The dead weight tonnage of the Israeli merchant marine is expected to rise by nearly one million tons, from 1.36 million tons in 1967 to about 2.3 million tons by the end of 1971. Bulk carriers will account for over half the additional tonnage (0.54 million tons), tankers for 0.37 million tons, and refrigeration ships for the balance. The investment required for this additional capacity will total about IL 360 million at 1966 prices.

The revenues of the shipping industry are projected at IL 560 million by 1971, about 50% more than in 1966. The annual rate of growth will thus be less than during 1960—1966 when the output grew on the average by 11.5% annually. Exports of shipping services, as shown in the balance of payments, are expected to increase from about $85 million in 1967 to about $125 million* by 1971.

(b) Manpower in the shipping industry

During the 1960's the merchant marine suffered from a manpower shortage because of the increased number of seamen needed to keep up with the expansion in the fleet. As a result, foreign seamen made up 31.8% of the crews in 1966 (about 40—50% of the officer ranks) as against only 10.8% in 1960. In the coming years, the number of foreign seamen will decline as more men are trained by local marine schools and under other training programs. The need for seamen may also be expected to drop because of the anticipated transition to bigger, more mechanized ships (which are more efficient and require less manpower per ton of dead weight) and because of the curtailment of passenger operations.

The number of employees in the shipping branch (including non-vessel personnel) will amount to approximately 5,900 in 1971/72 as against 5,600 in 1966/67; of these 4,800 and 3,900, respectively, are Israelis.

(c) Harbors

The development plans for Israeli ports envisages the completion of Ashdod and Eilat harbors still underway, the expansion of the various ports so that they will be able to handle additional passengers and freight, and the installation of modern cargo-handling devices. It is expected that through improved procedures and better distribution of shipments between Haifa and Ashdod ports it will be possible to cope more readily with overloads during peak periods, mainly during the citrus season, and with increased passenger traffic in summer.

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* On the basis of commodity imports, FOB.

In 1971 about 90% of the 7.2 million tons of the projected cargo will pass through the Mediterranean ports of Haifa and Ashdod and about 10% through Eilat, as against 95.6 and 4.4%, respectively, in 1966.

During the four years of the development plan, port investments are expected to total only about IL 40 million, since most of the construction work in Ashdod and Eilat has been completed. The projected investments are for the construction of another two piers, an installation for conveying liquids and an office building in Ashdod port; the erection of a passenger shed and citrus fruit loading and unloading installations, and the completion of a modernization project of the eastern section of Haifa port, and the construction of a refrigeration facility and an office building in Eilat.

The number of port employees is now about 5,000 and is not expected to increase, since further technological and organizational improvements will obviate the need for additional staff.

E. POSTS AND TELECOMMUNICATIONS

1. Development Until Now

Upon the establishment of the State of Israel, its Ministry of Posts was charged with the responsibility for the postal and telecommunications services, previously operated by the Mandatory Government.* There was considerable expansion of the various types of postal and telecommunications services, due to the growth and dispersal of the population, the rising standard of living and increased contact with foreign countries.

TABLE 35. Development of postal services, in selected years 1950—1966

	1950	1955	1960	1966
a. In absolute terms:				
Permanent employees (thousands)*	3.5	5.8	7.4	11.4
Gross investment (IL million, in terms of 1966 prices)	10.4	10.0	27.7	113.9
b. Postal services, as % of all transportation and communications				
Employees	12.3	15.3	16.7	19.6
Investments (current prices)	6.9	7.4	10.9	25.2
Net national product (current prices)	12.1**	12.1	11.9	16.5

* At end of fiscal year.

** 1952.

Sources: Employees—Central Bureau of Statistics, Israel Postal Services, Special Publications. Investment — Working papers prepared by Dr. A. L. Gaathon, of the Bank of Israel, and the Economic Planning Authority. Net National Product —Central Bureau of Statistics, National Accounts Section.

Up to the end of the 1950's postal services expanded more slowly than transportation and communications as a whole. This was changed, however, by the rapid development of telecommunications services and the large

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* The Ministry of Posts is engaged in three major fields: a) transmission of spoken communications — telephone and radio-telephone; b) transmission of written communications — letters and telegrams; c) transmission of goods and of money — parcel post, money orders, etc. Additional services provided include the Philatelic Service and the Post Office Bank.

investments made in the telephone network during the 1960's, and the relative weight of postal services' net product within the transportation and communications sector began to rise. By 1967 about 9% of all investments in the economy* were effected in this field, compared with 1—2% between 1950 and 1961.

The various types of postal and telecommunications services did not develop at a uniform rate. Beginning with 1955, and especially since 1960, telephone services developed twice as fast as the others.

TABLE 36. Turnover* of postal and telecommunications services, in selected years 1950—1967

	Total revenue, at current prices (IL million)	Total %	Postal Services %	Telegraph %	Telephone %	Philatelic service %
1950	4.1	100.0	42.0	13.3	44.7	—
1955	26.2	100.0	39.7	8.9	51.4	—
1960	65.0	100.0	25.7	6.9	62.4	5.0
1965	170.7	100.0	18.2	9.8	68.8	3.2
1967	270.4	100.0	17.6	7.1	72.9	2.4

* Exclusive of Post Office Bank and commissions; including defense tax

Source: Ministry of Posts.

TABLE 37. Quantities of mail handled, in selected years 1950—1966

	1950	1955	1960	1966
Mail sent abroad* (tons)	..	474.8	715.3	1,262.8
Parcels dispatched in Israel** ('000)	154	434	1,146	1,675 ††
Telegrams, sent and received† ('000)	1,264	1,234	1,526	1,924
Index of number of pieces handled‡	..	127	206	307‡‡

* By fiscal years; exclusive of parcels.

** By fiscal years; national and international

† " calendar "; " " "

†† Fiscal year 1965/66

‡ Based on count of letters, postcards, printed matter, etc. (1953/54 = 100).

‡‡ 1965.

Source: Central Bureau of Statistics, Israel Postal Services, Special Publications

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* Exclusive of housing.

The rapid expansion of telecommunications was due to the rapid rise in the standard of living, especially since 1955, and the great increase in economic activity.

TABLE 38. Telecommunications services, in selected years 1950—1966

	1950	1955	1960	1965	1966
Telephones ('000)	28.3	66.0	117.6	257.7	302.9
Local telephone calls* (million)	61.4	103.5	246.7	604.1	676.3
International telex calls** ('000)	—	—	18.5	105.6	117.9

* Since 1955 including interurban calls by direct dialling.

** Incoming and outgoing, by fiscal years.

Sources: Central Bureau of Statistics, Ministry of Posts.

The telex service, introduced at the end of 1959, serves as a substitute for telegraph services, and the number of telegrams sent has been growing at a slower rate since then. In 1966/67 the number of international telegrams even declined.

Demand* for telephones includes private individuals, business firms and institutions. The share of private individuals has been rising and is now estimated at 70% of total demand. In view of the high installation charges and the continuous service provided over many years, it seems reasonable to assume that the public regards this as an expense similar to the purchase of durables. The number of applications for new telephones actually varies with the changing level of total private consumption.

TABLE 39. Average annual variation in demand for telephones, 1950—1967 (%)

	1950—54	1955—59	1960—64	1965—67
Increase in total demand	7.3	14.9	21.0	12.8
Increase in per capita demand	1.3	10.5	16.4	10.1
Increase (decrease) in private per capita consumption in terms of 1966 prices	(0.4)	4.6	6.1	1.1

Sources: Ministry of Posts and Economic Planning Authority.

Per capita demand decreased somewhat during the first period (1950-54), owing to the rapid increase in the population, the drop in the standard of living, and the steep rise in installation charges.

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* Demand is here defined as the number of lines in service, plus applicants waiting for connection.

During the following two periods per capita demand continued to rise at an accelerating rate. This parallels the rising standard of living and the relative decline in installation charges.

Per capita demand again decreased slightly during the fourth period (1965-67), when the slowdown in economic activity led to a stabilization in the standard of living. This was accompanied by a relatively large increase in telephone charges, exceeding the rise in the cost-of-living index.

TABLE 40. Average annual percentage rates of changes in demand for telephones, telephone charges* and cost-of-living index, 1951—1967, by periods

	1951—54	1955—59	1960—64	1965—67
Demand for telephones, per capita	1.1	10.5	16.4	10.1
Installation charges	58.8	8.4	8.4	23.0
Charges per call	81.7	8.4	5.9	17.0
Maintenance charges	53.2	10.2	2.5	22.0
Cost-of-living index (ba[illegible]: 1966 = 100)	31.4	4.7	6.0	5.5

* Including defense tax.

TABLE 41. Increase in number of telephones in various countries, 1960—1967

	Per capita G.N.P. in 1965 ($)	Telephones per 100 inhabitants, January 1			Average annual increase 1960—67 (%)
		1960	1965	1967	
United States	3,240	39.5	45.9	49.9	4.0
Denmark	1,740	22.2	27.5	29.1	4.6
Western Germany	1,620	10.0	13.9	15.9	8.1
Great Britain	1,550	15.0	18.3	20.7	5.5
Belgium	1,540	11.9	15.6	17.4	6.6
Israel	1,130	4.9	9.8	11.4	15.1
Austria	1,080	9.9	13.8	14.9	6.0
Italy	960	7.2	10.5	12.4	9.7
Japan	760	5.2	12.5	16.1	20.7
Greece	600	2.3	5.1	6.7	19.5
Spain	580	5.5	8.0	9.6	9.8
Turkey	230	1.0	1.0	1.1	3.2

Sources: G.N.P.—World Bank Atlas, I.B.R.D.; number of telephones—The World's Telephone, American Telephone and Telegraph Company, December 1967.

During the 1950's, supply of telephones grew with the demand, so that the backlog in applications was stable at 10,000-15,000 at the end of each year. Since 1961, however, demand increased faster than new installations, causing the backlog to reach a record 69,000 in 1965. With demand slowing down and installation continuing at a rapid rate, this backlog was by the end of 1967 reduced to 28,000.

In comparison with other countries Israel has fewer telephones per hundred inhabitants than its per capita product would suggest. Expansion of the telephone system, however, as measured by the increase in the number of lines per capita, is among the most rapid in the world (see Table 41).

TABLE 42. Postal and telecommunications services, 1967, 1971

	Total		Tel Aviv and Central District		Haifa and Northern District		Jerusalem and Southern District	
	('000)	%	('000)	%	('000)	%	('000)	%
a. Total demand								
1950	28.2	100	16.8	59.6	7.1	25.2	4.3	15.2
1955	43.8	100	25.7	58.7	11.1	25.3	7.0	16.0
1960	87.2	100	55.9	64.1	18.7	21.4	12.6	14.5
1966	250.4	100	158.1	63.1	59.5	23.8	32.8	13.1
b. Installed telephones (end of fiscal year)								
1950	17.1	100	8.4	49.1	5.3	31.0	3.4	19.9
1955	35.2	100	19.2	54.5	9.5	27.0	6.5	18.5
1960	67.9	100	40.6	59.8	16.5	24.3	10.8	15.9
1966	209.3	100	120.5	57.6	57.8	27.6	31.0	14.8
c. Backlog of applications (end of December)								
1950	11.1	100	8.4	75.7	1.8	16.2	0.9	8.1
1955	8.6	100	6.5	75.6	1.6	18.6	0.5	5.8
1960	19.3	100	15.3	79.3	2.2	11.4	1.8	9.3
1966	41.1	100	37.6	91.5	1.7	4.1	1.8	4.4

Source: Ministry of Posts.

2. Development Plans for 1968—1971

Ministry of Posts forecasts envisage a 60% rise in the revenue from postal and telephone services, from IL 244 million in 1966 to IL 396 million in 1971; telephone services will continue to expand at a more rapid rate than the others.

The telephone development program is based upon the demand expected in 1971, as computed from population projections, the forecast of the rise in per capita consumption and the elasticity of expenditure. These forecasts, prepared on the basis of 1967 prices, show that demand for telephones will rise from 270,000 at the end of 1967 to 470,000 by the end of 1971. The development program envisages that between 1968 and 1971 170,000 new installations will be completed. This will be less than the demand during that time, so that the order backlog will increase to 60,000 by the end of 1971.

TABLE 43. Postal and telecommunication services, 1967, 1971

	1967		1971 (projection)	
	IL million	%	IL million	%
Total	270	100.0	396	100.0
Telephones	197	71.4	300	75.8
Postal services	48	17.4	58	14.6
Telegraph and telex	19	6.9	23	5.8
Miscellaneous	6	4.3	15	3.8

Source: Ministry of Posts.

By the end of 1971 there will be 18 telephones per 100 inhabitants, about 60% more than at the beginning of 1967. It may thus be assumed that at that time the number of instruments will approximate that customary in other countries with a similar standard of living.

The quality of service will be improved and new types of service, such as telephones in automobiles, will be added after potential demand and the justification for such innovations are investigated. The underwater cable between Israel and France, with 96 channels, will go into service by the end of 1968. Some IL 60 million will be invested in this project, about one half by Israel.

TABLE 44. New telephone installations, 1966—1971, by districts

	'000 installations	%
Total	170	100
Tel Aviv and Central District	110	65
Haifa and Northern District	34	20
Jerusalem and Southern District	26	15

Source: Ministry of Post. Data referring to fiscal years.

Most of the applications for new telephone installations are from the Tel Aviv area, so that the largest expansion will take place in this district. A great deal of attention will, however, be devoted to outlying places, in spite of the large investments needed to link them to the national network.

TABLE 45. Planned investment in fixed assets of postal and telecommunications services, 1968—71*
(IL million, in terms of 1966 prices)

	Total 1968—71	1968	1969	1970	1971
All services	563	128	140	145	150
1. Telecommunications	532	121	132	137	142
a. Buildings	63	15	16	16	16
b. Equipment	193	39	48	51	55
c. Network	208	46	52	55	55
d. International communications	34	10	8	8	8
e. Miscellaneous	34	11	8	7	8
2. Other postal services**	31	7	8	8	8

* By fiscal year.

** Including general administrative services.

Source: Ministry of Posts.

Postal and telecommunications services had 11,500 employees in 1967, and this is expected to rise to 13,500 by 1971. Efficiency and productivity are expected to rise, owing to the introduction of work norms and premium payments, and to improvements in methods. The technical proficiency of post office employees will also be improved through a training program; thousands of employees will receive instruction in telephone engineering, especially in maintenance.

3. Forecast for Development during 1972—1978

From 1972 on, the demand for telephones is expected to grow at a slower rate than in recent years. By 1978, demand per thousand inhabitants is likely to reach 230, compared with 97 in 1967 and 151 in 1971. The share of Tel Aviv in total demand will decline, owing to the more rapid rise in the standard of living and expansion of economic activity in other districts.

It is expected that 350,000 additional telephones will be installed between 1972 and 1978. The demand for international telephone channels is expected to rise by 10%, after a one-time jump of 75% when the underwater cable is completed in 1969; until now the annual rate of growth has been approximately 25%. The use of telex services will increase at a slow rate, estimated at 2% a year.

CHAPTER FOURTEEN: TOURISM

A. DEVELOPMENT OF TOURIST INDUSTRY SINCE 1948

1. General Development

Tourism is one of Israel's major export industries. From 3% of total exports in 1952[1] it advanced to 7% by 1966. Since the added value exceeds 70%, its share in net foreign currency receipts is greater, amounting to 10—11%, so that it is second only to citrus exports. The foreign-currency income from tourism rose from $ 2.5 million in 1952[2] to $ 59 million in 1966 and the number of tourists rose from 22,000 in 1949 to 330,000 in 1966.

The importance of the industry cannot be measured only in terms of its economic contribution. Tourism helps to maintain contact between Israel and Jews in the Diaspora and to interpret its achievements and problems to the rest of the world.

During the first few years after the establishment of the State, tourism was mostly unorganized. Most of the tourists were Jews who came to visit relatives and see the country. During 1951—1957 the average number of tourists was 40,000 a year: over 35% from the United States, about 20% from Britain and France, some 15% from Asia and Africa — altogether about 37% from Europe and 45% from America. Over half the tourists came by air, about a third by sea and the rest by land.

The Sinai Campaign at the end of 1956 caused a considerable set-back in the influx of tourists and its effects were still perceptible during the first half of 1957. For 1958, the Tenth Anniversary Year of the Sate of Israel, a series of major events was planned and publicity and propaganda abroad were stepped up. It was further decided that tourists should receive a premium on the official rate of foreign exchange: IL 2.16 to the dollar instead of IL 1.80. A special 15% discount was also allowed on foreign currency purchases in Israel. As a result, the number of tourist arrivals went up by about 60% — from 42,000 in 1957 to 68,000 in 1958, and foreign currency receipts rose by 120% — from $ 5.5 million to $12 million.

Until 1959 the annual increase in the number of incoming tourists was about 10,000; as from 1960 the number grew by an average of 30,000 a year. In 1967, as a result of the Six-Day War, the numbers declined by 11% compared with 1966, but towards the end of the year tourist traffic again

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[1] No data are available for previous years.

[2] See below — Income from Tourism.

revived. An increasing number of tourists, many of them youngsters and volunteers came to visit relatives or to see Jerusalem and the Holy Places.

TABLE 1. Incoming Tourists,[1] 1951 – 1967.

Year	Including One-day Visitors by Sea (thousands)	Annual Increase (per cent)	Without One-day Visitors by Sea (thousands)	Annual Increase (per cent)
1951[2]	39.4	19.0	35.9	—
1952	43.3	−12.9	32.0	−10.9
1953	37.1	7.9	34.1	8.5
1954	39.1	6.5	37.0	8.5
1955	49.9	26.6	46.2	24.9
1956	42.6	−14.6	40.3	−12.8
1957	42.3	− 0.7	41.9	4.0
1958	68.1	61.0	66.8	59.4
1959	85.1	25.0	80.9	21.1
1960	117.7	38.2	110.9	37.2
1961	159.6	35.7	145.9	31.4
1962	183.7	15.1	165.3	13.3
1963	218.5	18.9	198.3	17.6
1964	251.6	15.1	229.6	15.8
1965	296.5	17.8	259.9	13.2
1966	328.1	10.7	290.2	11.7
1967	291.1	−11.3	268.6	− 6.6

1) It should be noted that the number of tourists leaving Israel is smaller than the number coming in, one reason being that some of the tourists take out temporary residence permits.

2) In 1949 and 1950 the number of tourists was about 22,000 and 33,000, respectively.

2. Israel on the International Tourist Map

World tourism has grown in recent years at an average annual rate of 10%. The growth of the tourist traffic to the Middle East was more rapid and its share in international tourism advanced from 1% in 1962 to 2.5% by 1966. Tourism to Israel did not grow as fast as the tourist traffic to the Middle East generally, and Israel's share in it went down from 11.5% in 1963 to 10% in 1966. These developments are summed up by the following figures:

Year	Increase[1] in Tourism		Share of Middle Eastern Tourism in International Tourism	Share of Israeli Tourism in Middle Eastern Tourism
	International	To Israel		
	per cent	per cent	per cent	per cent
1962	10.0	15.1	1.0	11.4
1966	10.0	10.7	2.6	10.0

Source: Survey of Ministry of Tourism, 1966/67.

1) Increase from 1961 to 1962 and from 1965 to 1966.

3. Characteristics of Tourism to Israel

While the number of tourists from Europe grew almost fourfold during 1960—1966, to over 150,000, the number of tourists from America merely doubled, reaching 145,000 in 1966. From 40% in 1959, tourism from Europe advanced to over 50% of the total in 1966. As from 1964, however, the proportion of American tourists ceased to decline, and Europe's share continued to increase only because the numbers from other continents — not including America — remained stable at 22,000 a year between 1964—1966. In 1967, as a result of the Six-Day War, the percentage of American tourists rose.

TABLE 2. Incoming Tourists, by Continent of Origin

Year	Absolute Figures			Per Cent			
				America			
	America	Europe	Other continents	Total	USA	Europe	Other continents
1958[1]	32,300	26,400	11,000	46.3	37.0	37.8	15.9
1959[1]	42,200	31,700	9,700	50.5	43.4	37.9	11.6
1960[1]	59,500	40,900	13,600	52.2	43.7	35.9	11.9
1961	67,900	61,900	16,100	46.5	38.0	42.4	11.0
1962	73,000	72,900	19,400	44.2	35.8	44.1	11.7
1963	82,800	94,300	21,200	41.7	34.5	47.5	10.8
1964	89,700	117,700	22,200	39.1	31.2	51.3	9.6
1965	102,100	135,400	22,400	39.3	32.0	52.1	8.6
1966	114,800	152,770	22,200	39.6	35.0	52.7	7.7
1967	110,700	133,400	24,400	41.2	33.4	49.7	9.1

Source: Central Bureau of Statistics.

1) Including temporary residents.

Britain and France are the main sources of European tourists, the numbers from each of these countries rising from 10,000 in 1960 to about 40,000 in 1966, and the annual increment since 1963 being about 5,000 from each.

Another source of tourism to Israel is north-western Europe, especially Scandinavia and Germany, from which about 30,000 tourists came in 1966. The influx from these countries has developed rapidly in recent years at an average annual rate of 20% during 1963—1966.

A special category are tourists who come to Israel for one day on a sea cruise. From 1,000 in 1958 their numbers rose to about 40,000 in 1966. Though they make only a short trip through the country their daily expenditure is high (about $ 75), but as a rule they do not use hotel accommodation.

The average tourist stay[1] during the past eight years was 11 days, more than the average in other Mediterranean countries.[2]

TABLE 3. Incoming Tourists by Mode of Entry, 1951—1967 (in thousands and percentages)

Year	Total[1]	By Air	By Sea[2]	One-day by ship	By Land	Total	By Air	By Sea[2]	One-day by ship	By Land
1951	39.4	19.7	14.2	3.5	2.0	100.0	50.0	36.0	8.9	5.1
1953	38.0	19.0	11.3	2.9	4.8	100.0	50.0	29.7	7.6	12.7
1955	51.9	23.4	15.1	3.7	9.7	100.0	45.1	29.1	7.1	18.7
1956	44.8	23.0	13.0	2.3	6.5	100.0	51.3	29.0	5.1	14.6
1957	45.0	27.2	13.8	0.4	3.6	100.0	60.4	30.7	0.9	8.0
1958	69.6	42.4	19.6	1.3	6.3	100.0	60.8	28.2	1.9	9.1
1959	85.1	50.9	19.2	4.2	10.8	100.0	59.8	22.6	4.9	12.7
1960	117.7	71.9	29.0	–	16.8	100.0	61.1	24.6	–	14.3
1961	159.6	92.6	30.3	13.7	23.0	100.0	58.0	19.0	8.6	14.4
1962	183.7	101.5	35.5	18.4	28.3	100.0	55.3	19.3	10.0	15.4
1963	218.5	124.8	37.0	20.2	36.4	100.0	57.2	16.9	9.2	16.7
1964	251.6	140.9	40.3	22.0	48.4	100.0	56.0	16.0	8.7	19.3
1965	296.5	163.0	42.5	36.6	54.4	100.0	55.0	14.3	12.3	18.4
1966	328.1	185.6	38.6	37.9	66.0	100.0	56.6	11.8	11.6	20.0
1967	291.1	211.6	26.2	22.5	30.8	100.0	72.7	9.0	7.7	10.6

Source: Central Bureau of Statistics.

1) Including temporary residents until 1958; not including temporary residents from 1959 onward.

2) Not including one-day visitors by ship.

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1) Of tourists staying in Israel for less than 1 month.

2) In 1965 the average tourist stayed 9.5 days in France, 7.3 days in Greece, 6.7 days in Austria, and 5 days in Italy.

European tourists on the average spend more time in Israel than Americans (14.3 as against 10 days). On the other hand, more American tourists stay in hotels, so that the average number of nights spent in hotels by American tourists is higher than of Europeans (7 as against 6).

As the average annual income of American tourists is higher than of European tourists, they spend more even though they do not stay as long. About two-thirds of American tourists are Jews — twice as many as among Europeans.

4. Income from Tourism

Income from tourism comprises money exchanged through banks, foreign-currency purchases in local shops, and hotel expenses.[1]

Until 1957 the income from tourism was small: it rose from $ 2.5 million in 1952 to only $ 5.5 million in 1957. In 1958, the Tenth Anniversary Year, however, the income went up to $ 12 million and from 1959 to 1963 it rose at the rate of about 30% a year. The increase was particularly high after devaluation in 1962. As from 1964 the rate of growth slowed down and

TABLE 4. Foreign Currency Income from Tourism, Total and Per Tourist 1952—1967

Year	Total Income $ Million	Annual Increase	Income per Tourist in Dollars 1	Annual Increase
1952	2.5	-	71	-
1953	3.8	52.6	104	46.5
1954	4.8	28.2	125	20.2
1955	7.2	50.1	150	20.0
1956	6.6	- 9.1	159	6.0
1957	5.5	- 16.7	130	- 18.2
1958	12.0	119.5	178	36.9
1959	16.2	34.5	196	10.1
1960	27.0	27.2	239	21.9
1961	30.1	11.5	199	- 16.7
1962	38.4	27.6	220	10.6
1963	52.9	37.7	259	17.7
1964	54.2	2.5	239	- 11.6
1965	54.8	1.2	200	- 12.7
1966	59.1	7.7	194	- 3.0
1967 2)	50.0	- 15.4	180	- 7.2

Source: Ministry of Finance.

1) Foreign-currency income less estimated income from one-day visitors ($ 75 a day).

2) Estimate.

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[1] Not including the receipts of the national carriers and foreign currency not converted through the banks.

foreign currency receipts advanced but little, from $ 53 million in 1963 to $ 59 million in 1966. When, in 1967, owing to the Six-Day War, the number of tourists went down and there was a change in the type of tourists, income went down to $ 50 million.

Average income per tourist has been declining since 1963, apparently because of the higher proportion of Europeans. The Six-Day War also contributed to this downward trend since it brought a relatively large number of volunteers and pilgrims, who spend less. The expenditure per tourist was $ 220 in 1962, about $ 260 in 1963 — apparently as a result of devaluation — $ 200 in 1965 and $ 180 in 1967.[1] It should be noted that the average tourist spends more in Israel than in most other tourist countries; in 1962 the average income from tourists was $ 156 in Egypt, $ 144 in Greece, $ 106 in France, $ 82 in Italy, and $ 67 in Jordan. The high average tourist expenditure in Israel is due to both a longer sojourn and a higher daily outlay.

Most of the expenditure (over 80% in 1966—1967) is connected with the tourists' sojourn — hotel accommodation, meals in restaurants, travel and entertainment. The rest is spent on various purchases.

TABLE 5. Proceeds of Tourist Industry, by Sub-branches, 1961 and 1965

	1961	1965	1961	1965
	(in million dollars)		(in percentages)	
Total income	30.1	54.8	100.0	100.0
Hotel accommodation	14.4	22.5	48.0	40.9
Transport	3.5	9.0	11.3	16.4
Purchases	3.5	7.5	11.3	13.6
Other expenditure	8.7	15.8	29.4	29.1

Source: Economic Planning Authority.

5. Means of Conveyance

Most tourists come to Israel by air, and only a minority by sea. The percentage of tourists who arrive by boat[2] has come down rapidly and continuously, but the percentage of tourists arriving by land (via Jordan) increased throughout the period. Fifty per cent of the tourists arrived by air during 1951—1955, 60% in 1958 and 64% in 1966. The proportion of tourists who came by sea[2] went down from about 30% in 1958 to 20% in 1966. Only 9% came by land in 1958 and 23% in 1966, but in 1967 their share again went down to 10% as a result of the War, while the proportion of tourists coming by sea continued to decline and 73% came by air.

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1) The expenditure of one-day visitors by ship is about $ 75 (about 3 times as much as the average tourist expenditure).

2) Not including tourists landing by sea for one-day visits.

6. The Hotel Industry

The increase in the number of tourists was accompanied by an 80% increase in the number of nights spent in hotels between 1961 and 1966. Seventy per cent of tourists staying in Israel for less than one month use hotel accommodation. American tourists spent more nights, on the average, in hotels then Europeans, more of whom stay in kibbutzim, youth hostels and the like. In recent years the average number of hotel nights per tourist has gone down, probably because a higher proportion has been staying for shorter periods and more of them have been coming from Europe. The percentage of nights spent by European tourists in Class B hotels has been going up, while American tourists tend to stay at Class A hotels.

TABLE 6. Hotel Nights at Tourist Hotels (in thousands), 1961 – 1966

Year	No. of Nights-Tourists	Annual Increase percent	No. of Nights-Israelis	Annual Increase percent	Total No. of Nights	Annual Increase percent
1961	1,136	-	834	-	1,970	-
1962	1,267	11.5	921	10.4	2,190	11.1
1963	1,560	23.1	929	0.9	2,490	13.8
1964	1,799	16.3	945	1.7	2,744	10.2
1965	1,876	4.3	1,060	12.2	2,936	7.0
1966	2,101	12.0	1,069	0.8	3,170	8.0

Source: Central Bureau of Statistics.

In 1958 there were 3,872 rooms in tourist hotels, of which 70% were in the three major towns and 30% in the rest of the country. In 1966, out of 9,926 hotel rooms available, 47% were in the three major towns and 53% in the rest of the country.

Accordingly tourists tended to stay more in other parts of the country, though not in the same ratio as the new distribution of hotel rooms would

TABLE 7. Hotel Nights per Tourist, by Continent of Residence, 1961 – 1966.

Year	Total	America	Europe	Other Continents
1961	7.8	9.3	6.0	8.1
1962	7.7	9.6	5.7	7.7
1963	7.9	9.1	6.5	8.8
1964	7.8	9.1	6.5	9.6
1965	7.2	8.8	6.0	7.6
1966	6.9	8.5	5.7	7.5

Source: Central Bureau of Statistics.

have warranted. In 1955 tourists staying in hotels spent 95% of their nights in the three major cities as against 62% in 1965, with a parallel increase in the percentage of nights spent in the rest of the country.

In previous years, about 40% of tourists stayed in hotels in Tel Aviv and the vicinity, less than 10% staying in Jerusalem. In Summer 1967, after the Six-Day War, the proportion that stayed in Jerusalem went up to 20%.

TABLE 8. Hotel Nights by Class of Hotel and Continent of Residence, 1962 and 1966

Class	1962				1966			
	Europe	America	Other Continents	Israelis	Europe	America	Other Continents	Israelis
A	39.1	66.0	25.5	9.0	34.6	69.8	31.4	14.9
B	39.2	22.5	40.7	32.5	46.1	19.7	39.1	38.8
C	21.7	11.5	33.8	58.5	19.3	10.5	29.5	46.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Central Bureau of Statistics.

7. Tourist Transport

During 1960—1966 the number of buses, taxicabs and rental cars for tourists[1] grew considerably. The proceeds of the tourist transport industry climbed from 3.5 million dollars in 1961 to $ 9 million in 1965. The number of accredited tourist guides doubled to 1,200 from 1960 to 1966.

B. FORECAST

The tourist industry is expected to develop rapidly during 1968—1971. The number of incoming tourists is expected to grow by more than 15% a year: from 290,000 in 1967 to 645,000 in 1971, while foreign-currency receipts should grow from $ 50 million to $ 115 million.

1. Incoming Tourists

Table 9 presents the forecast of the number of tourists coming to Israel during 1968—1971, which is based on recent tourist trends in Israel and the rest of the world. International tourism is expected to continue to increase at the rate of 10—15% annually, as a result of rising incomes in Western Europe and the forthcoming reduction in flight rates, while the Middle East should take a growing share of the international tourist trade.

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[1] The number of tourist buses rose from 80 in 1960 to 190 in 1966, tourist taxicabs from 60 to 154; in 1966 there were 1,100 rental cars and desert-tour cars.

In 1968 the number of tourists is expected to be more than 30% higher than in 1966 because of Israel's 20th anniversary celebrations and the fact that it will be the first season since the reunification of Jerusalem.[1]

The forecast further takes into account various recent tourist incentives: in October 1967 hotel rates were reduced by 10%; the devaluation of the Israel Pound has cut costs for most tourists; charter flights are now available to all tourists from Scandinavia as well as to students. Attempts are also being made to encourage popular tourism and winter tourism, and thus to gain wider access to the tourist market of north-western Europe.

It is expected that the proportion of tourists coming by air will continue to increase and the relative share of arrivals by sea will continue to decline, in line with the trends prevailing in recent years and the expected reductions in airline tariffs.

TABLE 9. Forecast of Incoming Tourists, by Mode of Entry (In Thousands)

Year	No. of Tourists[1]	One-day Visitors by Ship	Arrivals by Air[2] per cent	Arrivals by Sea[3] per cent
1966	328	38	64	14
1968	410	40	91	9
1969	480	45	92	8
1970	560	50	93	7
1971	645	55	94	6
1978	1,250			

1) Including one-day visitors by ship.
2) It is assumed that in 1968 - 1971 there will be no tourist arrivals by land.
3) Not including one-day visitiors by ship.

2. Forecast of Foreign-Currency Income

Foreign-currency income has been estimated on the basis of the trend in previous years and the expected changes in the type of tourists: increases in the proportion of European tourists and in popular tourism — including pilgrims and winter tourists, who spend less on the average then tourists from America, especially from the U.S. The estimate also takes into account receipts from one-day visitors by ship, whose daily expenditure is high though their total expenditure is low. Accordingly, by 1971 the income from tourism is expected to double and reach $ 115 million.

The average income expected per tourist is about $ 190 — less than before 1966, owing to the change in the type of tourist in continuation of the trend of recent years.

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1) No comparison is made with 1967 because the War reduced the number of tourists that year.

TABLE 10. Forecast of Foreign Currency Income (in $ million)

Year	Total Income	Expenditure per tourist (in dollars) [1]
1966	59	194
1967	50	180
1968	73	190
1969	86	
1970	100	
1971	115	

1) Total income, less income from one-day visitors by ship (at the rate of $ 75 per tourist), divided by the number of tourists (without one-day visitors by ship).

3. Estimate of Hotel Nights

This forecast was based on the expected number of incoming tourists, on the assumption that the average tourist will spend 7 nights at a hotel in 1968—1971, despite the recent downward trend, as it is expected that with the development of winter tourism and popular tourism there will be a higher proportion of organized groups, tending to stay in hotels rather than in kibbutzim or with relatives or friends. The possibility of wider opportunities for excursions and trips, as a result of the geopolitical changes of the last year, was also taken into account.

TABLE 11. Hotel Night Forecast (in thousands)

Year	No. of Tourists [1]	No. of Hotel Nights–Tourists [2]	No. of Hotel Nights–Israelis [3]	Total No. of Hotel Nights
1966	290	2,101	1,069	3,170
1968	370	2,590	1,133	3,724
1969	435	3,045	1,200	4,245
1970	510	3,570	1,274	4,844
1971	590	4,130	1,350	5,480

1) Not including one-day visitors by ship.

2) 7 nights per tourist.

3) The hotel nights of Israelis were computed on the basis of 1966, with an annual increase of 6% due to the rise in income, the population increase and the growing internal tourism.

4. Hotel Room Forecast

The number of hotel rooms to be constructed was estimated according to the expected number of nights spent in hotels by tourists and Israelis in the different parts of the country. In the past hotel rooms have tended to become distributed more equally throughout the country, instead of being concentrated in the three major cities. As a result, however, the occupancy rate and the percentage of nights spent in hotels were highest in Tel Aviv, and only in the past year, with the reunification of Jerusalem and the many intersting sites that have become accessible there, did tourists extend their sojourn in Jerusalem. Taking these indications of preferences into account, hotel accommodation in the Jerusalem and Tel Aviv areas should be expanded, at the same time as recreation areas and facilities for popular and winter tourism along the coast, as well as in Eilat and the Dead Sea area, are being increased.

TABLE 12. Hotel Nights in Selected Places, 1966 and 1971

	1966		1971	
	Tourists	Israelis	Tourists	Israelis
Total	100	100	100	100
Jerusalem	13	6	27	8
Tel Aviv	32	7	32	7
Herzliya	11	4	11	4
Haifa	10	11	10	11
Eilat	4	3	8	5
Dead Sea	-	-	2	4
Other places	30	69	10	41

Source: Data for 1966 - Central Bureau of Statistics.

TABLE 13. Room Construction Required in Selected Places

	Number of Rooms in January 1968 [1]	Number of Rooms in 1971 [3]	Rooms Required
Jerusalem [2]	2,162	3,290	1,130
Tel Aviv	2,327	3,310	1,480
Herzliya	513	1,370	850
Haifa	930	1,500	580
Eilat	534	1,070	540
Dead Sea	-	370	370

1) Statistics of Tourist Enterprises Development Company Ltd.

2) Including hotel rooms in East Jerusalem.

3) The number of rooms was calculated on the basis of an average night occupancy rate of 60%, according to the equation: $\text{No. of rooms} = \frac{\text{No. of hotel nights}}{\text{365 days} \times \text{occupancy rate} \times \text{1.7 beds per room}}$.
The calculation was made separately according to the occupancy rates for Israelis and tourists, as set out in Table 12 above.

5. Investments and Personnel

In the past an increasing proportion of Israelis and European tourists have tended to stay in Class B hotels. As it is expected that the share of European tourists will continue to grow, the number of rooms in Class B hotels must be increased. At the same time it will be necessary to provide for additional rooms in Class A hotels to satisfy the demands of the wealthier type of tourist.

For these purposes, investments of about IL 175 million will be required, including 15% in foreign currency.[1]

Further investments are also projected to expand various services — sales to tourists, agencies, organization, restaurants, night clubs, sports facilities, parking lots, etc. The Ministry of Tourism envisages an investment of about IL 23 million by 1971, with the addition of over IL 20 million to restore historic sites, notably in Jerusalem and the vicinity.

Few data are available on the manpower employed in tourist services. It is estimated that in recent years about 13,000 persons were employed in all these services — half of them skilled personnel — constituting about 2.5% of total employment in the economy and about a quarter of the number employed in personal services. By 1971 the tourist industry is expected to employ about 20,000 persons. The shortage of skilled workers requires more extensive vocational training in hotel schools for, among others, reception clerks, waiters and chambermaids. Hotel managers will need guidance by foreign experts.

To ensure the implementation of the development plan outlined, the problems with which the tourist industry has had to contend so far must be energetically tackled. In the past, a relatively large number of expensive hotels were built to cater for the wealthier class of tourists, while the development of recreation facilities for popular tourism was neglected. In the future, both groups of tourists must be kept in mind. Shopping and entertainment centers must be developed, as well as recreation centers and health resorts in the Dead Sea area. The provision of a high standard of services is of paramount importance. These will assist greatly in lengthening the stay of tourists in the higher-income brackets and increasing their expenditure while in the country. To promote and develop popular tourism and winter tourism, it is important to plan regional tourist centers, well-equipped with attractive entertainment spots and organized tours, large enough to accommodate large numbers, which will help in attracting the tourists to pay return visits.

The detailed plans of the tourist industry will take effect after market researches now planned are carried out by the Ministry of Tourism. These market researches will study procedures for advertising and promotion; the extent of "package-deal" tours, covering traveling expenses and subsistence, to be expected, and potential types of tourists according to seasons and the type of vacations they seek.

The Ministry will supervise hotels, restaurants, etc. in order to raise standards and efficiency. Steps will be taken to expand training for staff in the tourist industry. In addition to Government activities, measures will be taken to encourage the general public to give a welcome to tourists.

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1) Investments per room, including building, furniture and equipment, are about IL 35,000 in the three major towns, and about IL 40,000 in Eilat.

C. APPENDIX — TOURIST OPINION

In a survey of tourism conducted in 1967, tourists were asked to express their opinions on the hotels and restaurants they had used. The findings are summed up in the following two tables:

Tourist Opinions on Hotels (in percentages)

Rooms					Prices				
Total	Good	Medium	Bad	No Response	Total	Expensive	Not expensive	reasonable	No Response
100	70	22	2	6	100	33	44	7	16

Standard of Service					Recommendations				
Total	Good	Medium	Bad	No Response	Total	Will Recommend	Will Not Recommend	May Recommend	No Response
100	67	23	4	6	100	66	9	17	8

Tourist Opinions on Restaurants (in percentages)

Quality of Food					Quality of Service					Prices				
Total	Good	Medium	Bad	No Response	Total	Good	Medium	Bad	No Response	Total	Expensive	Not Expensive	Reasonable	No Response
100	50	39	6	5	100	56	35	6	4	100	32	50	7	10

Although they were far from fully satisfied, 80% of all tourists and 86% of Jewish tourists said they would come to Israel again. As many as 92% of tourists intend to recommend Israel to their friends as a place to visit. It should be noted that about a quarter of all tourists in 1966 and over a third in summer 1967 were paying a second visit to Israel.

CHAPTER FIFTEEN: CONSTRUCTION AND HOUSING

A. CONSTRUCTION

1. Major Lines of Development

The construction industry is of special importance in Israel, as a barometer of economic activity. Since independence, the level of economic activity has been affected by immigration, which is a decisive factor as far as construction and housing are concerned. Mass immigration during the first years of independence necessitated the rapid erection of large numbers of dwellings, much of which was done by the Jewish Agency and the Ministry of Housing who assumed the main responsibility for immigrant housing, construction in development areas, and part of the housing for older settlers and newly-married couples.

In Israel the construction industry accounts for an unusually large portion of the national product, of investment and of employment. This is due to large investments in housing, as well as extensive construction for other sectors of the economy.

During this period extensive, even if not continuous, growth took place in construction for all purposes, but especially in connection with infrastructure investments, large development projects and public buildings. Housing prices rose, at the same time, more than the cost-of-living index.

The relationships between input factors in construction have changed basically, because of the relatively steep rise in the cost of labour, compared with that of capital, and in the level of technological development. These phenomena resulted in greater mechanization and in the manufacture of prefabricated buildings. In spite of this, the amount fixed capital per building worker is still low, and so is the level of productivity.

A considerable portion of housing construction is financed by the public sector. Most of the dwellings, except immigrant housing, are built for sale rather than for rent, with credit arrangements to ease the burden, especially for low-income families.

During the early 1950's, immigrant housing absorbed a large part of the economy's entire investment. Later, public investments were also applied to new settlements, development areas, popular housing schemes, and the clearing of temporary housing and slums. During the early 1960's, the Israeli economy operated at a high level of activity, resulting in a high growth rate and full employment, and the building industry made a major contribution to this. Rising per capita income, derived in part from personal restitution receipts from Germany, and greater immigration were the major causes of larger investments in housing. Things changed radically in 1965, when a considerable drop in immigration reduced housing construction and large development projects — the National Water Carrier, Ashdod port and the expansion of the Dead Sea Works — drew to a close, or were reduced, while investment in economic sectors, which do not work for export, declined. Building and development work was thus held up and postponed. At the end of 1967 there were signs of an easing of the recession both in economic activity in general and in the construction industry in particular.

2. The Structure of the Industry and Its Weight in the Economy

The construction industry produces buildings, earthworks, roads, pipelines, drainage and sewage systems. In addition there are maintenance, repairs and construction for the defence establishment, totalling about 10% of the industry's total output. About 60% of all investments in the economy are devoted to structures, earthworks, etc.

There are three major categories:

a. residential construction, which declined from 54% at the beginning of the 1950's to less than 50% in recent years;

b. construction for productive sectors of the economy[1] which also declined, to stand at about one-third of total output;

c. construction for institutions, whose share of the industry's output has doubled since the early 1950's, and now stands at 18%.

TABLE 1. Gross investment in construction, by categories, 1950-67 (periodic averages, in percentages, in terms of 1966 prices)

	1950-67	1950-54	1955-64	1965-67
Total (IL million)	21,330	4,050	12,505	4,775
Total	100.0	100.0	100.0	100.0
Residential	49.9	54.2	49.4	47.5
For industrial uses	36.4	37.8	36.8	34.1
For institutions	13.7	8.0	13.8	18.4

Source: Central Bureau of Statistics.

While gross domestic capital formation, in real terms, increased between 1952 and 1966 by a factor of 2.1, investment in buildings and earthworks doubled, investment in housing increased by a factor of 1.9, in public buildings by 4.7, and in construction for other sectors of the economy by 1.6. The national product during the same period expanded by a factor of 3.4.

In Israel construction and residential building constitute a larger portion of the national product than in Western Europe; residential construction accounts for a larger part of total investment, and the building industry provides a greater portion of all jobs (see Table 2).

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[1] This includes work done for agriculture, irrigation, manufacturing, mines, electric power supply, transport and communications, commercial establishments and hotels.

TABLE 2. The construction industry's share in the economy, in Israel and selected foreign countries, 1956 and 1965

	Per capita GNP ($)	Investment in construction, as % of GNP		Investment in residential construction, as % of GNP		Investment in residential construction, as % of gross investment		Employment in construction, as % of total employment	
	1965	1956	1965	1956	1965	1956	1965	1956	1965
Israel.	1,130	19	18	11	9	34	33	10*	10
Israel, as percentage of all resources		13	13	7	7	–	–	–	–
United States	3,240	11	11	5	4	29	25	5	5
Western Germany	1,620	11	14	5	6	22	21	8	7
Norway	1,620	13	14	4	4	15	14	8	8
France	1,620	10	13	4	7	24	31	–	–
Great Britain	1,550	7	9	3	4	20	21	6	6
Finland	1,550	17	17	6	6	22	22	–	9
Belgium	1,540	10	12	4	5	24	26	7	8
Netherlands	1,360	12	13	5	5	19	20	–	–
Austria	1,080	11	13	4	5	19	18	7	7
Italy	960	11	12	6	7	27	36	–	10
Ireland	830	11	11**	4	4**	22	19**	6	7

* 1957.

** 1964.

Sources: Israel – Central Bureau of Statistics. Other countries: Annual Bulletin of Housing and Building Statistics for Europe, U.N., 1965; Yearbook of Labour Statistics, ILO, 1966; Manpower Statistics 1950–1962, OECD, 1963; World Bank Atlas, 1967.

Net domestic product of the construction industry – that is, the income derived from it – fluctuated during the period reviewed between 8.5% and 9.5% of the total net domestic product, as based on factor cost, but declined in 1966 to 6.7%. Data for 1952 to 1966 are given in terms of current prices.

	1952	1954	1956	1958	1960	1962	1964	1965	1966
Product in IL million	80.3	199.9	167.0	233.1	268.0	473.9	648.8	721.3	606.3
As percentage of net domestic product	9.7	8.6	8.2	8.6	7.8	9.9	9.3	8.7	6.7

Source: Central Bureau of Statistics.

The industry also provides a large portion of all the jobs in the economy, in comparison with other countries, reaching some 10%, though during the slump of 1966-67 this dropped to 8.1%. Between 1955 and 1965, on the average, 9.6% of those gainfully employed worked in the construction industry.

	1956	1958	1960	1962	1964	1965	1966	1967
Employment in thousands	49.8	64.3	65.3	75.2	82.8	84.9	76.0	63.1
Percentage of all gainfully employed	8.4	9.8	9.3	9.7	9.7	9.6	8.7	7.6

Sources: Bank of Israel; Central Bureau of Statistics.

These figures are only a partial indication of the industry's importance in the Israel economy, as is shown below.

3. Volume of Construction

Residential Construction

Between 1948 and 1967 some 650,000 housing units were built, worth approximately IL 11,000 million, in terms of 1966 prices. Out of this total, some 65,000 units were temporary, built mainly during the years 1949-1953. The annual breakdown of housing units completed between 1950 and 1967 is as follows:

1950	1952	1954	1956	1958	1960	1962	1964	1966	1967	1949—1967
37,240	40.810	25,780	32.680	34,160	30,990	38.280	37.980	37,150	28,000	650,870

Sources: Ministry of Housing; Central Bureau of Statistics.

The demand for housing varies with changes in the population, the level of real income, the volume of available credit and its terms, and the relative profitability of home ownership compared with other assets. Since 1948 immigration has been the main cause of population increase, and a major factor in the demand for housing. During the period reviewed, real per capita income rose considerably, owing, *inter alia*, to capital receipts from abroad. Apparently a large part of personal restitution payments received from Germany was used for the purchase of real estate, mainly for the improvement of housing conditions.

Housing construction may be classified by the initiating sector into two categories: private building (including the Histadrut sector) and public building (by the Government, national institutions, local authorities and companies entirely supervised by these). Private building, and its share of the total, have been constantly expanding up to 1965, while public housing has been subject to violent fluctuations, which will be discussed below. The share of private construction is greater in monetary than in physical terms, as apartments built by private initiative tend to be larger and have more convenient kitchens and bathrooms amenities.

It should be noted that part of this construction work is carried out by private contractors at the Government's initiative and under its supervision. During the period much skill and experience in planning and execution have been acquired.

TABLE 3. Value* and number** of residential units built by private and public sectors, 1950—1967 (periodic averages, in percentages)

	1950—54†	1955—59		1960—64		1965—67	
	no. of units	value	number of units	value	number of units	value	number of units††
Total	100	100	100	100	100	100	100
Private sector	29	54	36	59	43	66	49
Public sector	71	46	64	41	57	34	51

* Exclusive of maintenance, repairs and Defence Establishment.

** Less temporary housing units, including asbestos houses.

† No reliable division of value is available for this period.

†† Exclusive of 1967.

Sources: Central Bureau of Statistics; Ministry of Housing.

Even during those years when the volume of immigration was not great, immigrant housing projects were an important factor, as dwellings were built to replace ma'barot (transit quarters) and temporary housing built for immigrants during the period of mass immigration. About half of all houses were built for new immigrants. As immigration is subject to great and unexpected fluctuations, demand sometimes exceeded the supply during periods of mass influx, thus necessitating a renewal of temporary construction. On the other hand, when immigration slowed down apartments remained vacant.

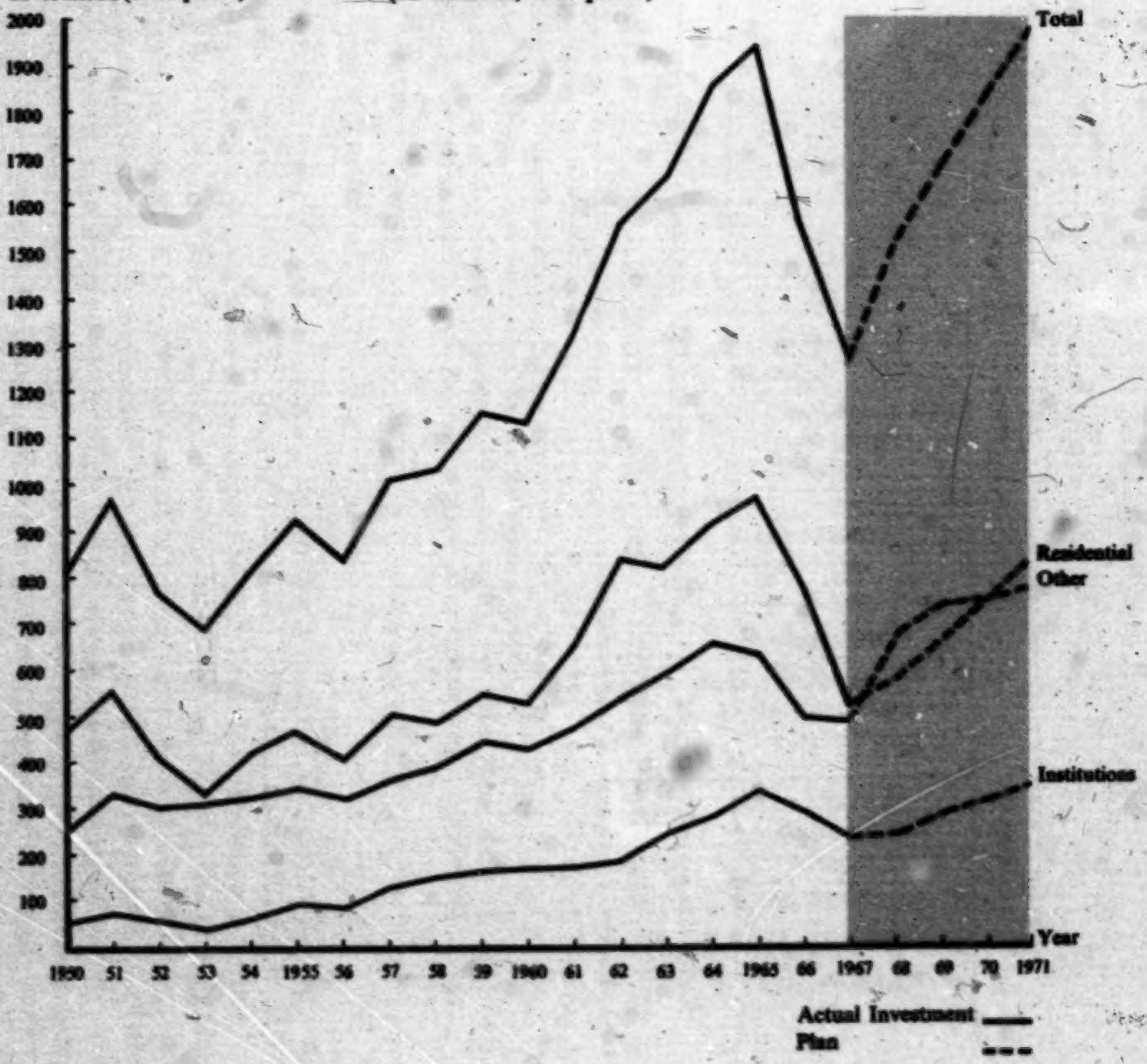
The level of activity in the industry changed drastically after the boom of the early 1960's, and the number of new housing starts was cut severely. This was partly due to the drop in immigration in 1965. Another factor was the building restriction ordinance issued in January 1965, designed to limit housing and commercial building, and the restrictions imposed on mortgage banks. Rumours preceding the issuance of this order caused a large increase in housing starts just before its publication, followed by a considerable slowdown in 1965.

Another cause of this slowdown is to be found in the economic policy designed to reduce the deficit on current account in the balance of payments by shifting means of production from work for domestic consumption to production for export, which led to a drastic reduction in public sector investments in housing during 1966 and 1967 (see Table 6). The disappearance of speculative demand, as a result of a surplus supply of apartments, declining prices, and preference given to other assets, also contributed to this development.

During 1966 and 1967 the recession in the construction industry became more severe. Building starts continued to decline, from the 1964 record of 3.7 million m³ to about 2 million m² in 1966, and even less in 1967, while unemployment among construction workers increased. In order to lessen the severity of the recession the Government eased credit for home builders and purchasers, taxes on vacant building plots were reduced, and the dates for the start of governmental building projects were advanced.

GROSS INVESTMENT IN CONSTRUCTION BY CATEGORIES, 1950–1971

(IL millions, 1966 prices)



On 1 August 1967, according to a survey conducted by the Ministry of Housing in cooperation with the Builders and Contractors Association, there were some 13,000 unsold completed dwellings, with an additional 23,000 units in various stages of construction. About 70% of this was in the public sector, partly because the Ministry of Housing had bought up some of the unsold homes built by the private sector.

a. Public Sector Residential Construction

The public sector has so far built more than 370,000 permanent housing units, worth about IL 4,000 million in terms of 1966 prices. Most of these were built for new immigrants, for underprivileged persons, and in development areas (see Table 4).

TABLE 4. Public housing units* by categories, 1949—1966

	Total	Immigrants			Others				
		Immigrants housing**	Transit camp liquidation	Agricultural settlements	Slum clearance	Popular housing and savings for housing†	Veterans in development areas	Newlyweds	Miscellaneous††
Absolute figures	359,240	187,710	22,250	57,800	5,470	53,120	5,540	4,800	22,550
Percentages	100.0	52.3	6.2	16.1	1.5	14.8	1.5	1.3	6.3

* Completed permanent housing units.

** Includes 9,260 asbestos houses, built between 1957 and 1965.

† Includes 3,380 units of New Immigrants' Savings for Housing Scheme.

†† Includes 9,720 units of Veteran Settlers' housing scheme, built in the cities during 1950—52, 6,110 units for regular army and disabled persons, housing for public service employees, police and minorities.

Source: Ministry of Housing.

Investment in immigrant housing has been a central factor in the economy since 1949. From 1951 public authorities also invested in building in new settlements and granted low-cost loans for the Popular Housing scheme, Housing for Veteran Settlers, etc. During the middle 1950's the Government also began to invest in the replacement of transit camps and other temporary or deficient housing. Construction for the more established sections of the population was also expanded through the Savings for Housing scheme. When immigration contracted, at the end of the 1950's, greater resources were allocated to projects to improve sub-standard housing conditions of underprivileged groups (partially by repair of houses and building of extra rooms), and also to development areas and the veteran population.

During 1961 and 1962 immigration again increased, and public residential construction expanded greatly. In 1963, however, there was a considerable cut-back, because of the large number of vacant apartments in the hands of Amidar, the national immigrant housing corporation. In 1964 public housing construction again expanded, mainly as the result of expectations for larger immigration. By 1965, as we have noted, several factors jointly acted to lower very drastically the level of public housing construction, while the number of available immigrant housing units increased. In 1966 and 1967 many of these apartments were allocated to newlyweds and to families who had lived in sub-standard conditions.

b. Private Housing Construction

Since 1948 the private sector has completed 233,000 housing units, valued at IL 7,000 million in terms of 1966 prices, most of them built for relatively high-income groups.

While public construction has social and political objectives, the volume of private construction depends upon profitability. Investment by private initiative in housing construction, in real terms, has risen fairly steadily since 1958. The industry reached its peak during the early 1960's, owing to rising demand, and apparently also to increased profitability. At the beginning of 1965 privately initiated housing starts dropped sharply, from 2 million m^2 a year during 1963-65 to less than 1 million m^2 in 1967.

Construction for Productive Sectors of the Economy

Part of building construction and earthworks constitutes infra-structure investment, mainly in the fields of water supply, electric power, transportation and communications. The total of this type of construction rose from IL 260 million in 1950, in terms of 1966 prices, to IL 500 million in 1966.

It is natural that in a developing country a considerable portion of development work and infra-structure investment is carried out by the public sector. In Israel, as well, the relative weight of public construction rose, owing to the execution of large projects, such as water supply systems, ports, road and rail networks, communications systems, plants for the exploitation of natural resources, schools, universities, hospitals, etc.

Several trends appear during the period under review. Construction for transport and communications has expanded, now accounting for one-third of non-residential construction. Construction for public services and institutions, as well as of commercial concerns and catering establishments, has also gone up. On the other hand, construction for agriculture for water supply, mining and industry during the last few years has declined (see Table 5).

Activity in this branch of construction declined considerably in 1966 and 1967, like residential construction. The drastic reduction in investments was due to the cutting down or completion of large development projects, such as the National Water Carrier, Ashdod port and the Dead Sea Works, as well as to the Government's deflationary policy.

Construction for Institutions

Institutional construction is done for: education, research and science (kindergartens, schools, institutes of higher education, etc.)—45%; cultural activities (libraries, museums, etc.) — 7%; health institutions (hospitals, clinics, etc.) — 12%; social welfare — 2%; religious institutions — 3%;

public administration, transportation, public bodies, etc. — 31 %. Most of these investments are carried out at the initiative of the Government and the local authorities, and provide mainly for social services.

TABLE 5. *Gross investment in construction*, by intended use, 1950−1967* (periodic averages, in percentages, in terms of 1966 prices)

	1950—67	1955—60	1961—64	1965—67
Total	100.0	100.0	100.0	100.0
Residential	49.9	48.6	50.2	47.5
For institutions	13.7	13.3	14.2	18.4
For industrial uses	36.4	38.1	35.6	34.1
Agriculture	10.2	15.7	7.7	6.0
Irrigation	6.0	5.3	6.2	3.6
Industry and mining	6.6	6.1	9.0	6.7
Electric power	2.2	3.0	1.9	2.3
Transport and communications	7.8	5.2	6.8	11.8
Commercial establishments and hotels	3.6	2.8	4.0	3.7

* Building and other construction.

Source: Central Bureau of Statistics.

Expansion was fairly rapid throughout this period. Investment, in terms of 1966 prices, rose from IL 60 million in 1950 to IL 350 million in 1965, but declined in 1967 to IL 245 million. The share of public buildings in total construction of buildings rose from 8 % during 1950-52 to 18 % during 1965-67.

Because of the character of public buildings, they cost much more per square meter of built-up area than housing.

Fluctuations in Level of Activity

One of the construction industry's characteristics is the fluctuation in its annual output, due primarily to public housing construction, as shown in Table 6.

Sharp fluctuations exist not only in actual investment in public construction, but also in the Government's annual housing budget. Table 7 shows that the budget for housing of persons who are not new immigrants generally fluctuates together with the budget for immigrant housing.

The fluctuations, mentioned in connection with residential construction, may also be observed in connection with other building activity. During 1964, for instance, when building was at one of its peaks, the Government increased the area of building starts for both residential and other purposes.

TABLE 6. Annual changes in gross investments in residential construction, by sectors, 1956–67 (percentage changes, each year compared with previous one, in real terms)

	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
Total housing construction	-13	22	-2	11	-2	22	26	-1	11	7	-20	-32
Public housing	-16	61	-12	6	-13	28	40	-20	9	5	-26	-40
Private housing	-11	-4	10	16	6	18	16	16	12	9	-17	-28

Source: Central Bureau of Statistics.

TABLE 7. Annual changes in government housing budget, by purpose, 1957–66* (percentage changes, each year compared to the previous one, in current prices)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Total	176	-42	68	-47	140	41	-13	76	-16	-10
Immigrant housing	322	-55	41	-49	212	59	-13	76	-19	-46
Other housing	24	6	108	-45	72	12	-13	76	-8	66
Government housing budget (IL million, in current terms)										
	164	96	160	85	204	289	252	444	375	337

* Fiscal years.

Source: Ministry of Housing.

Thus it appears that the considerable unexpected fluctuations in the level of immigration which lead to fluctuations in public housing activity are not the only cause of fluctuation in the industry as a whole, and that not enough has been done to regulate activity of the public sector, and to reduce its undesirable repercussions. Fluctuations in the industry have three types of effect:

a. The national product is affected directly. Since imports constitute a relatively small part of total input, a 20% drop in the construction industry's level of activity at present causes a decline of more than 1% in the national product.

b. An indirect effect is caused by changes in the volume of the industry's purchases from other sectors of the economy. Table 8 shows the proportion of the output of various industries sold to construction, and the changes in their output as the result of fluctuations in construction activity. It will be seen that this influence is very great, and a decline in building activity therefore triggers an additional contraction of the national product.

TABLE 8. Construction industry's influence on other industries (percentage of 1966 output)

	Sales to construction industry, 1965*	Effect of sales to construction industry on 1966 output**	Actual decline (rise) in 1966 output
Glass, ceramics, cement and their products	83	-14.9	-7.6
Basic metals and pipes	50	-9.0	-7.0
Mines and quarries	30	-5.4	2.6
Wood and wood products	33	-6.0	1.8
Metal products	21	-3.8	-4.6
Road and rail transport	17	-3.1	-5.0
Machinery and electrical equipment	16	-2.8	-1.7

* The seven industries included in this table, out of a total of thirty, sold to the construction industry at least 15% of their output in 1964. Percentages represent all construction industry inputs, including mutual purchases among these industries.

** On the basis of an 18% decline in the construction industry in 1966. These data are 2–3% lower than those referring to investment in construction, taking into consideration building activity which does not constitute investments.

Source: Bank of Israel.

c. Other Effects

The construction industry has a multiple influence on the national product through lower incomes in other industries, which cause a contraction in demand for the remaining sectors of the economy. The main conclusion to be drawn is that fluctuations in the activity of the construction industry cause a relatively large change in output, prices and employment in the rest of the economy, all of which add up to sharp fluctuations in overall economic activity.

Fluctuations in construction also have negative effects on the industry itself. The production of building materials is not continuous, so that their prices rise during a boom and stocks accumulate during a recession turnover increases and productivity rises at a slower rate; wages rise during booms to levels in excess of the official scales.

In conclusion, the negative effects of fluctuations in this industry can be reduced through the regulation of investment among the different types of public construction, as well as through a reduction in the size of these fluctuations.

Regional Distribution of Construction and Population Dispersal.[2]

The Ministry of Housing's policy has been to build in accordance with the policy of population dispersal, which was intended to increase the proportion of the country's population in the development areas (in the Northern, Southern and Jerusalem districts) and reduce the proportion in the coastal areas (Tel Aviv, Haifa and Central districts). However, in both monetary and physical terms housing construction in the development areas was below the corresponding population increases. This resulted in a larger number of persons per room and in a lower stock of housing capital per person in the development areas than elsewhere.

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[2] See also chapter on Regional Distribution.

The dispersion of public housing does match the population increase in the various areas, but this is not enough, since there is less private housing in development areas. To balance this, a larger portion of public housing would be necessary in the development areas (see Table 9). This applies especially to the Northern and Southern districts.

TABLE 9. Residential construction and population increase by districts, 1962—65 average (percentages)

	Total	Total development areas	North	South	Jerusalem	Total coastal areas	Haifa	Central	Tel Aviv
Population Increase									
May 22, 1961—Dec. 31, 1965	100.0	47.6	16.8	23.8	7.0	52.4	13.8	15.8	22.8
Residential construction									
Number of units*	100.0	36.7	12.9	16.8	7.0	63.3	15.3	18.9	29.1
Area (m^2)*	100.0	32.9	12.6	13.5	6.8	67.1	15.1	20.0	32.0
Gross investment**†	100.0	32.3	11.3	13.0	8.0	67.7	13.5	19.5	34.7
Private residential construction									
Number of units*	100.0	21.1	10.8	4.2	6.1	78.9	16.2	19.5	43.2
Area (m^2)*	100.0	21.7	11.5	4.3	5.9	78.3	15.5	21.3	41.5
Gross investment**†	100.0	22.6	9.6	5.2	7.8	77.4	13.6	20.0	43.8
Public residential construction									
Number of units*	100.0	49.4	14.7	27.0	7.7	50.6	14.5	18.4	17.7
Area (m^2)*	100.0	47.7	14.1	25.6	8.0	52.3	14.5	18.4	19.4
Gross investment**†	100.0	48.7	14.2	26.2	8.3	51.3	13.3	18.7	19.3

* Average of starts and completions.

** In terms of 1966 prices,

† Average of the years 1963—1965

Sources: Central Bureau of Statistics, Economic Planning Authority.

4. Input Factors in Construction

Manpower and Wages

Between 1955 and 1965 an average of 9.6% of all gainfully employed persons worked in the construction industry. This is a high percentage in comparison with that in developed countries (see Table 2). The peak was reached in 1963-65, with 10% of all gainfully employed. However, while the industry contributed to full employment in boom years, it also played a central role in the unemployment of the recent recession years. Cut-backs in building activity lowered employment in this field to less than 9% of the total in 1966 and below 8% in 1967 (see Section 2, above). Labour force surveys indicate that this industry lost a higher proportion of workers during 1965-67 than any other. At the end of 1967 employment began to level off, and even showed signs of an increase. No great expansion is, however, to be expected in the near future on the basis of recent building starts.

Throughout the period under review there were fluctuations in construction employment between times of boom and slack. This caused a "shortage" of workers in boom times, resulting in wages above the official pay scales and in an actual shortage of trained workers. Fluctuations are less extreme in employment than in investment; changes in the volume of investment, therefore, have a greater effect on per capita productivity, which rises slowly owing to the creation of concealed unemployment.

Estimates of per capita output indicate that productivity in the industry is low compared with other fields — a phenomenon which also exists in other countries. Per capita output in the building industry rose between 1955 and 1964 on the average by 3.2% a year. However, it may be assumed that these estimates are low, since the public housing sector's output is here included on the basis of cost, and not of market prices. This precludes, by definition, any change in its productivity.

During most of the period under review wages in the building industry rose faster than the general wage level. The wage index for construction labour also rose faster than the indices of construction inputs and the cost of living. During 1962-64 there also were large unofficial wage increases in this field, which are not included in the wage indices. Wage rises made the utilization of capital more profitable, which caused mechanization to go up considerably. Nevertheless, capital per worker in construction is still lower than average for the entire economy.

Raw Materials and Their Prices

Raw materials make up about 40% of all construction inputs, but the industry's dependence upon imports is relatively small. Only 2% of all inputs are imported directly, and overall imports only account for 15%. During the period under review, local production replaced many imported items, and now the industry only depends upon foreign suppliers for lumber, steel and white cement.

As stated above, industries supplying construction with raw materials suffer from the severe fluctuations in its activity. As the level of activity rises, so does the demand for materials, raising their prices, while, as activity declines, so does the utilization of the suppliers' productive capacity, which was expanded considerably during the boom years 1961-65.

The cost of imported inputs rose considerably, mainly because of changes in the effective exchange rate. Still, the rise in input prices for construction was lower than that of labour costs in the industry, and in general than the cost of housing (see Table 13).

Mechanization and Industrialization

In comparison with the early 1950's, building is now quite industrialized, but not so much as in European countries. Mechanization and industrialization of this field stem mainly from the changed relationship between the costs of capital and of labour. The outstanding result of the relatively high increase in labour costs is the extensive investment in mechanized construction and earth-moving equipment, and the industrialization of construction. Investments in building machinery exceeded IL 70 million in each of the years 1962-65, but declined to less than IL 30 million in 1966 and less than IL 20 million in 1967. Industrialization included manufacture of building components in central plants, and the establishment of factories for pre-fabricated houses. The productive capacity of the latter is at present only partially utilized, because of the recession in building; it amounts to about 5,600 housing units a year, while actual output is now only 2,000 units. At present pre-fabricated construction costs are similar to those of ordinary methods, but in the long run largescale production and full utilization of potential may bring them down considerably. At present pre-fabricated construction is consequently not yet competitive with conventional methods.

In addition to the mechanization and industrialization of building, great progress has been made in the industry owing to technological changes introduced as the result of much research, conducted by private and public initiative.

B. HOUSING

1. Housing Conditions

Israeli housing standards have risen considerably, after thousands of temporary over-crowded and low-quality housing units had been built during the first years. Nevertheless, many families still live under crowded conditions (see Table 11).

The median number of persons per room was 2.2 in 1957, declining to 1.9 in 1962 and 1.7 in 1966. As for amenities: in 1959 there were kitchens or cooking arrangements in 93% of all homes, toilets (internal or external) in 94%, baths or showers in 85%; by 1963 these percentages had risen to 95, 96 and 88%, by 1966 to 97, 98 and 90%. Despite the improvement in services, many families do not yet possess them.

Table 10 indicates that crowding is still greater in Israel than in Western European countries.

TABLE 10. Indicators of housing density in Israel and other countries*

	Israel	U.S.A.	Western Germany	Great Britain	Norway	Finland	Netherlands	Austria	Italy
Housing units per 1,000 inhabitants	253	305	315	323	316	287	256	331	300
Rooms** per housing unit	3,2	4.9	3.5	4.4	4.2	2.9	5.2	3.4	3.1
Persons per room**	1.25	0.67	0.87	0.70	0.75	1.21	0.74	0.89	1.06

* This does not represent an accurate comparison, owing to differences in definitions.

** Includes kitchens.

Sources: Israel — Central Bureau of Statistics; Economic Planning Authority. Other countries: Annual Bulletin of Housing and Building Statistics for Europe, U.N., 1965.

In spite of considerable improvements, housing standards still vary greatly with the family's continent of origin and date of their immigration. Old settlers enjoy better housing than new immigrants, while persons originating in Europe and America are better off than those from Asia and Africa (see Table 11).

Housing conditions can also be examined in the light of two financial criteria: capital stock of housing per capita and per capita consumption of housing services.

The per capita stock of housing capital rose from IL 1,700 in 1952 to IL 2,750 in 1959 and IL 4,150 in 1966, all in terms of 1966 prices. Per capita consumption of housing services, estimated on the basis of increase in floorspace and increased costs of housing services, rose from IL 220 in 1952 to IL 340 in 1959 and IL 450 in 1966 (1966 prices). In recent years, housing has remained a stable component of toal private consumption — about

15% in real terms. In terms of current prices, however, this has gone up from 10% in 1952 to 15% in 1966.

TABLE 11. Jewish families by number of persons per room and head of family; continent of birth and date of immigration (%)

	Persons per room					
	Total	Less than 1	1.00—1.99	2.00—2.99	3.00—3.99	4.00 and more
All families	100.0	12.7	53.5	21.5	7.6	4.7
Born in Israel	100.0	10.1	62.8	17.9	4.0	5.2
Born in Asia and Africa						
Veteran settlers	100.0	(8.1)	41.2	30.8	12.3	(7.6)
New immigrants	100.0	5.6	35.0	31.2	18.0	10.2
Born in Europe and America						
Veteran settlers	100.0	23.9	63.2	11.4	(1.0)	(0.5)
New immigrants	100.0	14.1	63.6	18.7	2.3	(1.3)

Source: Central Bureau of Statistics.

All the above demonstrates that housing standards have improved. On the other hand, some factors have slowed down the rate of this improvement. During the early 1950's many small and low-quality housing units were built, and only a few years later these could no longer furnish housing of a standard appropriate to the level of income common in Israel. This was one result of the pressure of mass immigration and shortage of resources. However, even in later years residential buildings were put up of a standard which place in doubt their adequacy as housing appropriate to income levels to be expected in a few years. Often, too, environmental services did not suit the needs of the population.

The average unit built by the private sector is larger than that built by the public sector (see Table 12). Other indicators show that the average level of services is also higher in private construction.

Rent control laws, in addition to their other effects, have made the construction of rental housing unprofitable, and have caused maintenance of presently rented buildings to be neglected owing to the landlords' low income. Proposals have recently been approved to amend the rent control law to assure landlords a higher rate of return, and additional changes are under discussion. Incentives have also been approved, within the framework of the Law for the Encouragement of Capital Investments, for investors in rental housing (see below).

TABLE 12. Floor space and number of rooms in average apartment by sectors, 1962—66 (construction starts)

	Average floor space (m^2)				Average number of rooms			
	1962	1964	1965	1966	1962	1964	1965	1966
Total	67	72	74	81	2.6	2.8	2.8	2.9
Public construction	56	60	58	61	2.5	2.8	2.7	2.8
Private construction	84	87	90	94	2.8	2.9	3.0	3.0

Source: Central Bureau of Statistics.

2. Prices of Housing and Land

During the period under review the index of housing costs rose more quickly than the cost-of-living index, or the index of construction input prices (see Table 13). The difference between the indices of housing costs and construction input costs is due, inter alia, to the fact that the latter does not include the cost of land and contractors' profits. At the same time, part of the rise in apartment prices can be explained as being due to higher quality.

TABLE 13. Average annual rate of change in cost-of-living index, housing cost index and index of construction input costs, 1958—1967 (percentages)

	1955—58	1959—61	1961—65	1966—67
Housing cost index	6.6	5.5	17.8	- 1.9
Cost-of-living index	5.4	4.5	7.2	1.6
Index of construction input costs*	6.8	7.2	7.5	0.0

* Until 1964 known as "Index of Construction Costs," and composed on a different basis.

Source: Central Bureau of Statistics.

The "shopping basket" of housing costs includes costs of apartments and key money (making up 89 %) rents and property taxes. The share of housing costs in the cost of living has risen from 6 % in 1950-51, when it only included rent, to 12 % in 1959 and about 15 % in 1964. This percentage represents the portion of private consumption expended on housing.

The largest increases in apartment prices were during the boom years 1962-1964. At that time rising demand drove the price of apartments up, and expectations of greater price rises to come created even more demand. Rising prices made residential construction more profitable, raised the building industry's share of total investment, of the national product and of employment, and led to a rise in land prices. Naturally the higher housing prices also contributed to the rise of the cost-of-living index. When, however, a considerable stock of unsold apartments had accumulated in 1966 and 1967, apartment prices stabilized, and even moved downward (the index of housing prices declined from the middle of 1965 until almost the end of 1967).

Prices of building plots rose steeply practically throughout the period under review, especially during two periods: the years of rationing and price control before 1952, when the public put its liquid assets into real estate, and the boom years of the early 1960's, when quickly ballooning demand for apartments made it more profitable to own land than other assets. The price of building lots rose mainly in the densely populated coastal area, but also elsewhere. Rising prices of land made it feasible to re-use it by pulling down old structures and building new ones, and it also encouraged high-rise construction.

In 1963 the Land Betterment Tax Law was changed, including the tax on real estate profits, and municipal taxes on vacant lots were also raised. These changes helped to end the real estate boom in 1964, and activity in this field declined even more, owing to lower demand for apartments and the 1965 slowdown in economic activity.

3. Housing Finance

The purchase of real estate and the repayment of mortgage loans constitute a form of saving, which accounts for a very considerable portion of total savings. Real estate savings between 1957 and 1965 equalled 13-14% of disposable income. Total savings at that time were between 4.5 and 6.5% of disposable income, owing to negative savings in respect of other components (see chapter on Savings). The balance of credits granted by financial institutions for construction and housing rose from about one-quarter of total credits in 1960 to about one-third in 1966.

A considerable portion of housing costs are financed through credits, mostly in the form of mortgage loans, mostly from Government funds deposited for the purpose, the own means of banks and financial institutions, and issuance of debentures in Israel and abroad. Most of public housing construction is financed by the Government, smaller portions coming from housing companies, contractors and the Savings for Housing scheme.

The Government policy of encouraging purchase of apartments by their inhabitants necessitated the setting-up of credit institutions and facilities for purchasers. Mortage conditions vary according to groups of the population and geographical area. In recent years, until the aboliton of linkage to the c-o-l index in April 1967, the nominal rate of interest on housing loans was between 3 and 8% in public housing according to the following order of priority: for immigrants, slum clearance, development areas, new settlements, veteran villages, and others. In private housing, it reached 10 to 11%. In public housing payment is over 15 and 30 years, in private 8 to 10 years. Mortgage loans amount to about 35 to 50% of the apartment's cost in public housing outside development areas, 70% in development areas and up to 100% for immigrants. In private construction it is between 25 and 40%.

Conditions for loans, which come from banking and governmental funds, after the abolition of linkage to the c-o-l index are as follows:

a) In development areas (immigrants, veterans, faulty housing, invalids and clearance of ma'barot): period of repayment 30 years; rate of interest: on banks' funds — 11% per annum; on government funds — 6% in each of first ten years and 7½% in the remaining 20 years; capital repayments on governmental funds start in 11th year.

b) In other areas (immigrants, young couples in immigrant areas, slum clearance, faulty housing, invalids and clearance of ma'barot): period of repayment 25 years; rate of interest: on banks' funds — 11%; on governmental funds — 6% in first 5 years and 7½% in remaining 20 years; capital repayments on governmental funds start in 11th year.

c) Various housing schemes (Popular Housing, young couples, low-income groups, etc.): period of repayment 20 years; rates of interest: on banks' funds — 12%; on governmental funds — 10%; repayment of capital in Governmental funds starts in 13th year.

On Governmental funds a lower and gradually rising rate of interest is payable during the first ten years: in category a) 1 — 5%, in category b) 1 — 6½% and in c) 1 — 8%. The balance of the interest accumulates, and is paid, together with repayment of capital, from the 11th year. There are also loans entirely from governmental funds, which are granted on similar terms.

From the middle 1950's until 1962 most loans were linked to the dollar exchange-rate or to the cost-of-living index. Most index-linked loans, other than for housing purposes, even then could already be converted to unlinked loans, in return for an increase in the interest rate, the borrower taking his choice, but this arrangement did not apply to the building industry. Since April 1967 borrowers were permitted to convert linkage to the index at the cost of a premium of 3 to 4% a year. This arrangement applies retroactively as of January 1966.

A further problem connected with housing finance and housing standards rests in the fact that during the period under review the great majority of mortgage loans were available for new apartments only. This increased demand for new housing at the expense of that for older apartments. This policy resulted in low-standard construction, since the new housing was needed for new immigrants, newlyweds and slum clearance. Making loans available for the purchase of all housing on the terms available now only for the purchase of new construction may create a demand for old apartments of adequate quality on the part of people with limited means while increasing the demand for better quality new housing on the part of those who vacate the older apartments. Such a change will contribute to improved housing standards and better utilization of the stock of houses.

C. CONSTRUCTION PLANS 1968—1971

1. Objectives

As was shown in the survey of past developments, the construction industry in Israel played a relatively larger part in the economy than is common in Western Europe, and its activity exerts a great influence on the activity of the economy in general. During the boom of the early 1960's it was decided to take steps to reduce the share of construction in the economy; the recession of 1965 to 1967 was partly the result of the considerable reduction in building activity, and partly gave rise to additional cut-backs in construction because of the great interdependence between this industry and other sectors of the economy.

Construction activity will be increased, and this will contribute to a greater growth rate for the economy. Still, the creation of inflationary pressure is to be avoided, and in order to prevent the transfer of resources from export industries to the building trades, the emphasis will be on keeping the growth rate from going too high. On the basis of projections of the resources available in 1971, and their allocations according to objectives and priorities included in the plan, construction output will rise by 12% annually in the period of the plan, while total investments will go up by 17% and the National Product by 9% (all on the basis of 1967).

Taking into consideration the limited available resources, the volume and composition of investments in construction will be determined so as to achieve the following objectives:

Housing. Priority objectives are the absorption of immigration and population increase, as well as solutions for the problem of slums. Housing for these purposes will be on a higher standard in response, partly, to higher per capita income and to all the other factors that generate greater demand for housing. Housing for new immigrants and persons in sub-standard homes, will constitute a larger portion of all housing construction. If immigration does not come up to expectations, and this changes the volume of new housing needed for immigrants, the difference will be made up by changes in the objectives of public housing construction, and also by increases or decreases in public construction for other purposes. Housing will be allocated to the different districts in accordance with the policy of population dispersal.

Construction for Public Institutions. The scope of this type of construction is intended to meet the needs of the growing population, and also to raise the standards of social services in order to close the lag, mainly in health and educational services, especially in development areas.

Construction for Other Sectors of the Economy. The volume of investment here is determined by the volume of overall investment in the various sectors of the economy, in accordance with the needs of each separate sector and of the entire economy. This will be discussed in detail in the chapters relating to each sector, and to investments.

2. Volume of Construction

In 1971 the volume of investments in construction will be IL 1,975 million, in terms of 1966 prices. This amounts to 58% of total investment in fixed assets in the economy, compared with 65% in 1965–67.

TABLE 14. Gross investment in construction, by intended use, 1968–71 (IL millions, in terms of 1966 prices)

	Total	1968–71 (in %)	1968	1969	1970	1971
Total	7,000	100.0	1,525	1,695	1,805	1,975
Housing	2,840	40.6	580	660	750	850
Productive sectors	2,950	42.1	690	745	740	775
Institutional	1,210	17.3	255	290	315	350

As stated above, the growth rate will be 12% a year, which is lower than the growth rate of all investments (17%). Table 15 presents the development of construction, by intended use, during 1968–1971, and the level of investment in construction in 1971 as compared with that of previous years. The table shows that in 1971 total investment in housing will be about 13% less than in 1965, but about 62% more than in 1967.

TABLE 15. Gross local investment, gross investment in construction by intended use, and gross national product, 1971 (indices)

Base year (100)	Gross investment	Investment in construction	Investment in housing	Investment in productive sectors	Investment in public Institution	GNP
1965	115.7	101.6	87.2	121.3	105.7	144.7
1966	141.6	126.5	109.5	157.4	119.5	143.8
1967	186.6	156.7	161.8	157.8	143.7	141.9

(a) Housing

In 1971 housing construction will total IL 850 million at 1966 prices and some 28,000 housing units will be built, with a total floor space of 2.5 million m^2. Housing will account for 43% of all investments in construction, compared with 46% in 1966–67. It will constitute 24% of all investments (1965 – 32%, 1967 – 27%) and 5% of the National Product (1965 – 9%, 1967 – 4.5%). With the higher standard of living, it may be expected that the quality of housing will go up, raising the cost per m^2.

Housing plans will take into consideration the prospect of a reduction in the stock of vacant dwellings[3] so that part of present stocks, added to the number of units to be built in the course of the plan, will balance supply and demand.

The classification by intended use, as presented in Table 16, assumes that many families will move from old to new and larger dwellings, while the old ones will be occupied by new immigrants, young couples and others.

TABLE 16. Housing construction, by intended use, 1968 - 1971 (in IL millions, in terms of 1966 prices. This includes all investments, including repairs and additions).

	1968–71	1968		1969		1970		1971	
	Investment	Number of units	Investment	Number of units	Investment	Number of units	Investment	Number of units	Investment
Total	2.840	22,000	580	23.500	660	26,000	750	28,000	850
New immigrants	670	5.800	140	6.400	160	7,000	180	7,000	190
Young couples	655	6.000	135	6,500	150	7,000	170	8,000	200
Others	1,375	10.200	285	10.600	315	12,000	360	13,000	415

Immigrant Housing. The plan is based on the assumption that 130,000 immigrants will arive between 1968 and 1971 (two-thirds of them from Europe and America)— about 9,200 families a year[4]. It may be assumed[5] that about three-fourths of this number will require new housing, while the remainder will take old dwellings.

At the end of 1967 the Immigration and Absorption Authority, a joint body of the Government and the Jewish Agency, proposed, in order to encourage immigration from the more prosperous countries, that housing and other buildings required by the immigrant be made available to him on rental terms, with a three-year option to buy. This Authority decided, that "the average housing for immigrants from the wealthy countries will be 85 m^2 in area, the equivalent of three or three and a half rooms, according to family status and professional needs, at an average price of IL 33,000 per unit." The Authority also decided that during the first three years of an immigrant's residence in Israel rent shall not exceed IL 150 per month, to be set according to size, price and location of the dwelling; those purchasing their housing will pay in cash 20% of the price, including any rent paid during the first year, the remainder being a long-term mortgage loan. In certain instances it will also be possible to buy privately built dwellings under the terms available for public housing and easy-term loans will also be made available for the rental of key-money apartments.

It should be noted that housing is one of the factors which influence the decision of the potential immigrants, many of whom are accustomed to a higher standard of housing than is customary in Israel. Many of them also have the means to obtain the level of housing they desire. Thus it may be assumed that the above measures can make a considerable contribution to the achievement of the predicted volume of immigration.

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[3] See sec. A-3.

[4] Based on assumed family size, by age and continent of origin.

[5] On the basis of past experience and assumed composition of immigration.

Housing for Young Couples. In 1971 some 24,000 marriages[6] will take place. It is assumed that about 30% of the couples will be above the age of 32, and that these marriages do not change the demand for housing. About one-third of the new couples will be looking for new housing, the remainder occupying existing dwellings. The plan assumes that the average size of the housing unit will increase, in order, inter alia, to encourage a rising birth rate.

Slum Clearance. Like many developed countries, Israel has a slum problem and the housing standards of part of the population are very low. A survey prepared by the Ministry of Housing indicates that 60,000 housing units are in areas necessitating fundamental rehabilitation; in addition there are 18,000 temporary units and a further 14,000 are overcrowded. Most of the housing units which are now classified as unfit for occupation and are to be demolished are included in these estimates. No accurate data are available on the economic position of the families occupying housing due to be rehabilitated or demolished, although their income level will have to be taken into consideration in determining the families whose housing must be replaced.

The rehabilitation and replacement of slum housing will continue throughout the period of this plan and thereafter. The techniques to be used are: a reduction in density by demolishing part of the buildings in a neighborhood; new construction in part of the areas; addition of rooms to existing housing; amalgamation of two neighboring dwellings, repair and improvement of single housing units; and large-scale improvements in the entire area.

Some of the families whose homes are to be demolished will move to new housing, either bought or rented, while some will buy or rent old dwellings. The average size per unit in this type of housing will also increase owing to rising income levels and in order to prevent the creation of new slums in the future.

Other Housing. In respect to the rest of the population there will be some switching of houses, part of the units thus vacated being acquired by new immigrants, young couples and families relocated from slums. People changing their dwellings will generally be looking for larger and higher-quality housing than that vacated by them. In 1971 this will include some 13,000 families, including all the families relocated from slum areas, but exclusive of 3,000 families who may leave the country.

(b) Construction for Productive Sectors of the Economy

The volume of construction for the productive sectors of the economy will total IL 775 million in 1971 at 1966 prices. As stated above, this volume of investment and its division among the different sectors is the result of the general investment program. Construction will constitute a larger share of output in the productive sectors of the economy — 42%, as against 34% during 1965—67.

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[6] On the assumption that the marriage rate will not change.

TABLE 17. Investment in construction, by sectors of the economy, 1968 - 1971 (IL millions at 1966 prices)

	1968–71	1968	1969	1970	1971
Total	2,950	690	745	740	775
Agriculture[1]	420	115	110	105	90
Water projects	200	50	50	50	50
Manufacturing, mining	825	130	200	230	265
Electricity	75	20	20	15	20
Transport and communications[2]	1,145	315	295	265	270
of this: roads	600	130	140	160	170
Commerce, hotels and personal services	285	60	70	75	80

1) Including earthworks, forestry and plantations.

2) Including urban and interurban roads, and special projects.

The plan for construction and earthworks for the productive sectors of the economy includes, inter alia, **Agriculture.** Most of the investments are in earthworks, forestry and plantations. **Water Projects.** The National Water Carrier will be completed. New sources of water will be developed through the construction of reservoirs and dams for the utilization of floodwaters. Earthworks and construction will be carried out to utilize sewage water, etc.

Electricity. Two new generating units will be built, each of 214-megawatt capacity. Transformer stations, etc., will be erected. After 1971 additional generating units will be set up and the electricity network expanded.

Transport. Lod Airport will be expanded to meet the demands of modern aviation. The Ayalon throughway project will be built, creating a route for rapid traffic through Tel Aviv. Considerable sums will be invested in the building of urban and interurban roads and central bus stations. The Eilat-Mediterranean oil pipeline will be built. **Hotels.** About IL 120 million will be invested in new and existing hotels.

(c) Construction of public Institutions

Considerable resources will be devoted during the time covered by the plan to cover the lag in the construction of buildings for health, education and other public services. In 1971 investment in buildings for public institutions and other public service structures will total some IL 350 million at 1966 prices. This is 1.4 times the amount invested in public buildings in 1967, but only slightly larger than the sum for 1965. The network of educational institutions will be expanded; new hospitals will be built in Safed and Tel Giborim; a mental hospital will be built in the north; new wings will be added to existing hospitals, and hospitals in out-dated buildings will be rebuilt. Other projects under the heading of public institutions are the construction of a building for the broadcasting service, courthouses, etc.

TABLE 18. Investments in construction for public institutions, 1968—71 (IL millions at 1966 prices)

	1968—71		1968	1969	1970	1971
	total	percentages				
Total	1,210	100	255	290	315	350
Of this:						
Education	510	42	120	125	130	135
Health	265	22	60	70	70	65

It should be noted that the total of investment in public institutions is subject to change in keeping with changes in the objectives of housing construction, but the total to be invested in construction will remain fixed. The public construction sector will serve as the balancing factor in order to attain the required growth of the National Product and avoid the dislocations in economic activity which might result from changes in the volume of construction investments.

3. Construction Inputs

Manpower. The construction industry's input of labor will be determined by its output level and the rise in its output per worker. Assuming that the volume of investments will be as planned, and that output per worker rises at a rate of 3% a year — as during the years 1955-1964 — the construction industry will employ 87,000 men in 1971, compared with 76,000 in 1966. In 1971 these will constitute 8.5% of all gainfully employed, as against nearly 10% in 1965 and less than 8% in 1967. The number of all gainfully employed in the economy will be 18% higher in 1966, but only 14% more in the construction industry. The demand for skilled workers and university graduates will go up, with corresponding relative declines in the number of unskilled laborers.

Equipment. A large portion of the sums allocated to the acquisition of equipment is intended to replace discarded machinery, and only a small portion will go to increase industry's productive capacity. A total of IL 145 million, at 1966 prices, will be invested in equipment in the course of this plan.

Raw Materials. At the end of 1967, the Technical Council of the Association of Engineers and Architects in Israel stated that although the quality of the materials now manufactured for use in construction had improved, it was still defective, and this was especially noticeable in the finished products. It may be assumed that lower protection against competitive imports will lead to the improvement of some of these products. Maintenance of official product-quality standards, and extension of quality control will also lead to an improvement in the quality of these products. The Ministry of Housing intends to improve the standards of quality control by more severe legal requirements.

4. Major Methods for Achieving the Objectives

The planned volume of investments in construction will be maintained in order to maintain the level of activity considered desirable. Should conditions change, or priorities be altered, the composition of investment in construction will also be changed. This can be done by alterations in the objectives of housing construction, as well as in those of industrial construction.

Investment in housing and other construction, particularly in development areas, will be designed to achieve the goals of the policy for population dispersal and meet the needs of the increasing population in these areas. Sould priorities change, the volume of construction will be regulated by districts and by intended use, so that none of the districts will experience sudden changes in the volume of investment. The level of construction activity will be regulated by the public sector, by changing the types of construction according to changing demand and adjusting public construction to the total level of investment required.

Rental Housing

At present there is hardly any investment in Israel in the construction of rental housing because of the low yield of such investments. This low profitability is to a great extent due to the Rent Control Law in its present form. However, rental construction has several important advantages for the economy:

(a) **Encouragement of Immigration.** Housing is one of the basic conditions for the increase of immigration from the more prosperous countries. Because it will enable immigrants to change their place of residence easily, making it unnecessary for them to invest in housing even before they have decided where, or even whether to settle in Israel, rental housing can contribute to the expansion of immigration. Immigration will also be encouraged by the incentives decided upon by the Authority on Immigration and Absorption (see above).

(b) **Mobility.** Rental housing will make it easier to move than it is today, as the sale of one apartment and the purchase of another are complex operations, which rental could avoid. It will thus expand labor mobility.

(c) **Higher Birthrate.** Rental housing will permit young families to avoid the great initial expense of buying a home, thus allowing them to marry earlier and to change their dwellings easily when the family grows.

(d) **Investments from Abroad.** It is believed that there are potential investors, without specific knowledge in the fields in which investments can be made, who are looking for ways of investing small sums for a reasonable yield. Building of houses for rental can be an attractive proposition for such investors.

(e) **Building Maintenance.** The amendments to the Rent Control Law proposed by the Raveh Committee, and the encouragement of rental construction are likely to raise the standard maintenance of buildings and prevent their premature deterioration.

In view of the advantages rental construction offers to the economy, the Government has decided on two major steps for its encouragement. The first step consists of a number of incentives offered to investors within the framework of the Law for the Encouragement of Capital Investments. The second step consists of amendments to the Rent Control Law, which the Government will shortly present to the Knesset for approval. The Raveh Committee, which examined this law, recently submitted two interim proposals. The first would exempt all vacated apartments from rent control, no matter how the apartment is vacated and how old the building is. The second proposal would exempt all new construction from rent control once and for all, instead of, as at present, exempting it for a period of fifteen years. As the law is now, rent control becomes applicable in the sixteenth year after the building's completion, reducing the return on the amount invested in it.

The amendments to the Law for the Encouragement of Capital Investments give local, as well as foreign investors the following incentives:

a) Reductions in direct taxes. Income from this building (including the one-third which can be rented for other than residential purposes) will be taxed at no more than 28% in respect of companies and 25% in respect of individuals, the same as for approved enterprises. In most instances the 25% ceiling will apply. Depreciation for tax purposes will be within 15 years, at the annual rate of 7% for the first five years and 6.5% for the next ten years.

As for property taxes, the investor will only pay the premium which gives him cover for war damage insurance.

b) Unlike other types of incentives under the terms of the Law for the Encouragement of Capital Investments, which are limited to a certain period of time, the incentives offered to rental housing carry no time limitation. This is intended to assure reasonable profitability to the investor during the entire life expectancy of the investment.

According to Ministry of Finance calculations, the annual net income, during the first 15 years, will be between IL 1,250 and IL 2,735 on investments from IL 22,500 to IL 45,000; in other words, the rate of return will be 5.5 to 6.4%. Beginning with the sixteenth year the annual net return will be IL 960 to IL 2,065, a rate of 4.3 to 4.9%.

Rent is based on an annual 8% of the investment in the dwelling, which equals IL 300 a month for a IL 45,000 home.

5. Housing Conditions

As the National Product and per capita income rise, so will the average size of the housing unit and the standard of housing services. The consumption of housing services, steady (at constant prices) in recent years at 15% of total private consumption, will go up at a rate similar to the increase in private consumption, which is estimated at 3% a year, on the basis of 1966. Per capita consumption of housing services will reach IL 520 in 1971, after having been IL 450 in 1966, both figures in terms of 1966 prices. The stock of capital invested in housing, per capita, will also increase at a similar average rate, reaching more than IL 4,800 in 1971, compared with about IL 4,150 in 1966, both in terms of 1966 prices.